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Archives of Dermatology and Syphilology

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SYPHILIS AMONG ARABS IN THE NEAR EAST

BEJEL AND *LOATH* IN IRAQ AND SYRIA; *FIRJAL* AND *LATTA* IN PALESTINE; *LAGHOUT* IN LEBANON; *ABOU-LAGHIF* AND *JIFÁR* IN TRANS-JORDAN

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MANILA, P. I.

INTRODUCTION AND NOMENCLATURE

It is well known that the clinicomorphologic as well as the loimologic pattern of syphilis, like that of any other disease, may be considerably influenced by certain racial, climatic and nutritional conditions. Thus, some peculiar features of syphilis among the Arabs in the region between the Mediterranean Sea and the Persian Gulf have recently produced a somewhat prolific literature on syphilis under a number of local names.

In central Palestine the term *firjal* (sometimes translated from the phonetic Arabian language into English and written *firgal*) is used by the people to denote a rash, a sore, an ulcer or a lesion of the throat, either alone or combined. In the coastal region of Jaffa, Syria, the term *latta* is commonly applied to any infection, but especially to any sore on the penis or genitalia. A similar-sounding word, *laghout,* is in use in the North, in the Lebanon, for the mucous patches in the mouth and throat. In Trans-Jordan the people use either *abou-laghif* or *jifár* to describe the previously mentioned symptoms. In the Iraq and in Syria the expressions *loath* and *bejel* are used. *Loath* is at the same time the term for the papular lesions (*boutons*) of *surra* in horses and camels and therefore by no means limited to human disease.

ETYMOLOGY

Before the nosologic aspects of syphilis in those areas are discussed, a few words may be said about local names in use, to elucidate their possible or probable derivation. Be it remembered, however, that comparisons in a flowery, phonetic language like Arabic are permissible to a much lesser degree than in the Indo-Germanic tongues. *Loath* in northern Iraq and Syria and *latta* in the coastal plains of Jaffa, Syria, remind one of *liwat,* sodomy, although the "t" is not necessarily of

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the same kind in these three roots. Sodomy is widespread among the Arabs and practiced particularly by the poor and by youths who cannot afford a woman. The donkey is the animal mostly used. It is noteworthy that *loath* denotes at the same time the papular lesions in horses and camels resulting sometimes from infection with Trypanosoma evansi. Also, *latta* means, among other things, "to be moistened" and is the root from which is taken the name of a certain pre-Islamic goddess of Arabia.

Baha is the Arabian word for "hoarse," the duplication *bahbah*—as in all languages stressing the degree and persistence—meaning "established." The hoarseness in *bejel* is often the only outward sign of syphilitic patches and laryngitis until the throat and pillars are inspected. Furthermore, *bajala* means in the flowery Arabian language "was prosperous."

Firjal in Palestine appears to be derived from the Arabic word for vagina, *firj,* thus clearly referring to the modus of transmission through sexual intercourse. *Abou* denotes "owner, possessor, father"; *laghif* means "met, encountered" and also "kissed." Hence, the connotation of the Transjordanian expression *abou-laghif* seems to be obvious.

DEFINITION OF THE PROBLEM

As aforementioned, prolific writings under the headings of the local, colloquial names just cited have beclouded the fact that spirochetosis has been and still is prevalent in Anatolia, Mesopotamia and the region westward toward the Mediterranean—a prevalence well known ever since the exhaustive studies made by von Düring [1] in 1896. Nothing is gained but confusion by introducing new local terms into medical literature when well established and well defined terms are already available. This applies not only to manifestations of yaws, such as *clavos,* and to American leishmaniasis, as pointed out by Schöbl [2] and Fox,[3] respectively, but to *bejel* and the others. The respective clinicoloimologic syndromes of syphilis and yaws are subject to factors such as race, climate, altitude and nutrition. But it would be inconsistent to coin new terms when differences only in symptomatology exist. Since neither dermatologic nor histologic studies of biopsy material have ever been made, such investigations became necessary in order to determine, first, whether in all or even in only the majority of cases the pictures termed *firjal* and *bejel* were really one and the same nosologic entity and, second, whether they were either syphilis or yaws.

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1. von Düring, E.: (*a*) Arch. f. Dermat. u. Syph. **61**:3-32 and 357-400, 1902; (*b*) München. med. Wchnschr. **65**:1000-1003, 1918.

2. Schöbl, O.: Philippine J. Sc. **35**:127-132 (Feb.) 1928.

3. Fox, H.: American Leishmaniasis: Report of Cases Observed in Brazil, Arch. Dermat. & Syph. **23**:480-502 (March) 1931; American Leishmaniasis: Further Observations, ibid. **30**:241-242 (Aug.) 1934.

Surgeon General Thomas Parran is interested in the problem of syphilis in the Near East, and he appointed me special consultant in the United States Public Health Service, with the request that I study the relation of *bejel* to syphilis and yaws.

LITERATURE

Among the many brilliant treatises dealing with peculiar aspects of syphilis among rather primitive living people in rural districts, mention may be made only of those by Neumann [4] and Glück,[5] from Bosnia and Hercegovina, by Lacapère [7] and Levy-Bing and Gerbay,[8] from northern Africa (Arabs), and by Brock [9] and McArthur,[10] from South Africa, besides the aforementioned classic studies of von Düring. Again from the Near East, and more recently, MacQueen [11] has written from Palestine on *firjal,* holding that it is a nonvenereal infection spread by contagion, showing a marked scarcity of primary lesions, a high rate of secondary disease, a rarity of neurosyphilis, a low abortion rate and little congenital disease.

Hudson,[12] partly in collaboration with A. L. Young and S. S. Crosley, has written voluminously on *bejel,* as seen by him in the American Mission Hospital in Deir-ez-Zor, in eastern Syria. He defined the disease as

> a childhood acquired non-venereal syphilis of the Bedouins whose course comprises two stages, the early and the late, separated by a period of varying length. Oral lesions are characteristic features of both early and late stages. The early oral lesions are mucous patches, and the late lesions are ulcers, which may attack or extend to include any structure within or contiguous to the mouth.

In another publication he asserted: "A majority of the fresh bejel cases were adults," and in another: "we are not infrequently required to treat a father . . . or a mother," continuing: "we have even treated old men and women suffering from what they said and what appeared clinically to be their first infection with Bejel." He emphasized that *bejel* occurs predominantly among Mohammedan Bedouins in rural

4. Neumann, J.: Wien. med. Ztschr. **6**:531 and 568, 1883; Wien. med. Presse **42**:9 and 66, 1901.

5. Glück, L.: Wien. med. Presse **29**:993 and 1033, 1888.

6. Footnote deleted by author.

7. Lacapère, G.: Ann. d. mal. vén. **12**:500, 1917.

8. Levy-Bing and Gerbay: Ann. d. mal. vén. **12**:449-475 (Aug.) 1917.

9. Brock, B. G.: Lancet **1**:1270-1272, 1912.

10. McArthur, D. C.: Brit. J. Dermat. **35**:411-425 (Nov.) 1923.

11. MacQueen, J.: Brit. J. Ven. Dis. **10**:33-50 (Jan.) 1934.

12. Hudson, E. H.: Tr. Roy. Soc. Trop. Med. & Hyg. **31**:9-44 (June) 1937 (the last of fourteen publications dealing with the same subject).

districts and that "sexual intercourse is not concerned in its propagation." Preceding this pronouncement, however, he printed a table attributing 6 "penile ulcers" and no "chancres" to the rural Bedouins in his series and 15 "chancres" and only 1 "penile ulcer" to Arab townsmen. In dermatology and in clinical descriptive medicine, any ulceration on or near the genitalia—and if certain other characteristic features are present, even on other parts of the body—is called a "chancre," although the ulcer itself will not tell its tale of pathogenesis.

Hudson argued that *bejel* runs a different course in Moslem Bedouins from that of syphilis in Christian Arabs living in towns. He therefore expressed surprise about a Christian "whose syphilis was of the Bejel type: one would have expected to find an initial lesion in his case."

Only a few of the contradictions apparent in the prolific writings of Hudson have been quoted, in order to show the lamentable confusion already added to medical literature on syphilis. The last quotation implies that an "initial" lesion, noticeable by the patient or at least clinically recognizable, is a *conditio sine qua non* in syphilis as well as yaws. However, the relative frequency of florid secondary syphilis without any previous "initial lesion," i. e., chancre, is well known to every syphilologist. In syphilis initial lesions may be so transitory or so mild that they do not become conspicuous to the patient, or they may be entirely absent. In many cases of latent infection there is no history, and these are the "nullers" in experimental spirochetosis in which the lymphatic glands nevertheless become infected and remain infective. To understand such clinical peculiarities of an infectious disease, loimologic factors, such as "soil," for the particular disease must be considered, although the mechanism for the peculiar biologic behavior of the micro-organism and the selective response of the infected host remain, for the time being, obscure.

Furthermore, Davies [13] has reported that 45 per cent of 584 female patients with syphilis had an internal chancre only, in most cases on the cervix, which thus evaded recognition except by minute examination with a speculum.

Certain clinical, morphologic and loimologic features of *bejel* led Widad [14] to discuss and compare the relation of *bejel* to yaws. He expressed the belief that yaws and *bejel* are identical diseases on the ground that both respond quickly to arsphenamine and bismuth, that florid dermal lesions in *bejel* are sometimes frambesiform and, lastly, that *bejel* is nonhereditary in his opinion.

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13. Davies, T. A.: Primary Syphilis in the Female, London, Oxford University Press, 1931.

14. Widad, Mohammad al Khatib: Is the Bejel Yaws or Syphilis? Baghdad, Government Press, 1936.

SOURCES AND METHOD OF MY STUDIES

For the past twelve years I have had the opportunity of observing and studying both syphilis and yaws in the Philippines and of comparing them with syphilis seen before that time during a number of years in Europe as well as with yaws seen in Central America and the West Indies. Many of my experimental and clinical studies have already been published, some in collaboration with Schöbl.[14a] For the present investigations I spent a month early in 1937 in the Iraq, Syria and Palestine. I was fortunate enough to have had many conferences with Iraquian and Syrian physicians, some of whom had practiced for several decades in their respective countries. I shall presently draw on their information as well as on my own observations. As to the latter, I had an opportunity to observe several hundred cases of *loath, bejel* and *firjal,* in addition to making biopsies in cases presented to me as typical.

In Basra, Syria, Dr. M. Widad gave me valuable information to support his view that *bejel* is yaws. He had made 1 biopsy showing undoubted histologic features of yaws, as I convinced myself later in Bagdad, where the slides were given to me in the pathologic department of the Royal Hospital by its present chief, Dr. Showkat Zehawi. However, this single case in which a biopsy was made, so far as my information goes and reports are available, was that of a Negro pilgrim going from the Sudan to Mecca, Arabia. It is obvious that this case, therefore, is no valid evidence for the assumption that *bejel* in Iraq is or may be yaws.

In Bagdad, among the many competent physicians interrogated, the best and profoundest information was furnished by Dr. F. Akrawi, specialist for cutaneous and venereal diseases and physician in charge of the Royal Hospital's department of cutaneous diseases. He as well as all other physicians in the Iraq expressed the belief that *bejel* is nothing but typical syphilis characterized by a peculiar prevalence of mucous patches, often as the only recognizable clinical lesion. It was most surprising to find in Bagdad that only specialists in cutaneous diseases and the health officers particularly interested in dermatology and

14a. Hasselmann, C. M.: Klin. Wchnschr. **5**:2404, 1926; J. Philippine Islands M. A. **8**:53-55, 1928; Zentralbl. f. Haut- u. Geschlechtskr. **33**:273, 1930; China M. J. **45**:1131-1155, 1931; Caduceus **11**:105-1121 (Aug.) 1932; Chinese M. J. **47**: 584-586, 1933; Ulcer of the Leg: Its Localization as a Point of Differential Diagnosis in Syphilis and Yaws Endemic Countries, Arch. Dermat. & Syph. **28**: 44-52 (July) 1933; Far East. A. Trop. Med., Tr. Ninth Cong., 1934, pp. 6-9; Fatality from Exacerbation of Latent Tuberculosis Due to Thio-Bismol in a Case of Yaws, Arch. Dermat. & Syph. **31**:686-691 (May) 1935; St. Luke's Hosp. Alumni A. News **14**:3-10 (Jan.) 1937; Ber. d. phys. med. Gesellsch. zu Würzburg **61**:51-69, 1937. Schoebl, O., and Hasselmann, C. M.: Arch. f. Schiffs- u. Tropen-Hyg. (supp. 2) **36**:1-36, 1932.

venereology knew the expressions *bejel* and *loath,* whereas other physicians, some of whom had practiced in Bagdad for more than twenty years, had never heard these colloquial Arabic terms. Later, in Damascus, Syria, where a large Bedouin clientele comes to the dispensaries, the same surprising lack of knowledge was encountered.

Of particular value seems to be the experience of such an authority as Akrawi, that abortions among the townspeople of Bagdad are "just as common as in Europe, or more." As to Arab Bedouin women, abortions "seem to be also common but certainly much less so than among patients from the cities." The experience of such sound and keen observers weighs heavy as evidence that abortions are rather common, even if they are fewer and even if no allowance is made for the natural reluctance of the Bedouin women, first, to seek medical aid in the towns at all and, second, to admit miscarriage or abortion, considered a fault and lack of womanhood.

The same affirmative information was given by Dr. Mahomed es Sahib, the district health officer for western Iraq, stationed in the oasis of Ramadi, with whom I had the privilege of going through the Arabian-Syrian desert north to the Syrian border, visiting a number of Arab settlements en route. During these days I had the opportunity not only of examining a variety of persons with *bejel* of all types and stages, but of obtaining possibly most important information concerning the underlying nosologic conditions from Dr. Sahib, who had been chief medical officer in Deir-ez-Zor, Syria, for eight years. I am therefore inclined to adhere to his views, based on long experience, rather than to Hudson's suppositions which were gained in the circumscribed activity of a mission hospital.

Dr. Sahib's experience had been that syphilis runs a similar course among Arabs and Europeans, with a goodly number of abortions and cases of congenital syphilis in the form of pemphigus neonatorum syphiliticus on the palms and soles, but with a preponderance of late secondary syphilis as plaques muqueuses on the lips, pillars, uvula, tonsils and tongue. He had occasionally seen primary chancre on the genitalia as well as on the lips. As to the transmission of the latter form, he stressed extragenital means, such as using the same drinking vessel, *manchel,* made of palm wood and polished with tar, and ripping off meat from chunks and bones during feasts and handing it to others who, in their turn, rip off the rest, thereby easily getting oral lesions.

In Hit, Iraq, of ancient fame for its pitch wells, which furnished the "mortar" to build the walls of Babylon, the high incidence of *bejel* with perforations of the nasal septum and palate was striking. I saw a patient with nearly complete loss of the nasal frame, resulting in a lupus-like appearance. Dr. Sion Menashi, the Civil Dispensary's medical

officer, presented a number of patients with typical periostitis, affecting mostly the tibias. However, well over two thirds of all patients, the majority of whom were children, showed oral and pharyngeal lesions only. On the other hand, in a considerable number of cases presented as instances of *bejel* the malady was certainly neither syphilis nor yaws at all but some other cutaneous disease.

In Abou Kemal, Iraq, on the Syrian border, Dr. Mohammad Jabban showed me a number of persons with typical periostitis and a woman with large, pinkish scars in the groins and on the abdomen at the sites of previous papular lesions of *bejel*. She had been given only one intramuscular injection of a bismuth preparation. This case was the only one observed during my entire investigation in which the quick healing of a supposedly papillomatous lesion resulting in large, pinkish scars, characteristic of yaws, was present. However, I saw the result only. In another case of "typical" *bejel* in the settlement of Gibra on the Iraquian border a girl had characteristic papular syphilid, confirmed by biopsy.

More than a week was spent in Deir-ez-Zor, Syria, where I was privileged to stay at the American Mission Hospital. Rev. R. F. Ogden, my host, gave me valuable information regarding Arabic linguistics. Dr. Y. Kaladjian, who was in charge of the hospital, presented a number of cases of typical syphilis as instances of *bejel*. Dr. Assef Saeb, formerly physician at the Municipal Hospital and at the time of my visit the possessor of a large private practice, had a thorough knowledge and understanding of the problem involved. He was much more critical about making the diagnosis of *bejel* than most physicians I had talked to in Syria or the Iraq. In a case of tuberculosis of the left foot and knee with sinus formation confirmed as such by the laboratory he had upheld the diagnosis of tuberculosis from the beginning, in the face of statements by Dr. Hudson and other consultants from the Mission Hospital, who had wrongly contended that the disease was *bejel*. He showed me a typical primary syphilitic chancre of the right tonsil in a young Bedouin woman, and a number of enormously bent tibias, ulnas and radiuses and large fungoid knees, all of which yielded satisfactorily to arsphenamine therapy, which seemed to prove their syphilitic genesis. Of most value was his authoritative information that the term in Arabic literature for syphilis is *zouhri* meaning "flower," "brilliant," "planet of Venus" and thus *maladie vénérienne*. The term, *franghi*, so much stressed by some misled foreign writers, is used only by the educated Arab to connote what is called *bejel* by the common people in ordinary language, in towns as well as in the desert camps. Born in the country and practicing there, Dr. Saeb held, with all other native practitioners interrogated in the Near East, that the people at

large do not make any difference at all between the *bejel* contracted by sexual intercourse and that extragenitally acquired. This universal opinion of native physicians is, indeed, most important, since it does away with artificial barriers erected by those writers who try to taint syphilis contracted during sexual intercourse.

Other physicians with whom I had conversations in the town of Deir-ez-Zor, Syria, and during trips to Arab settlements in the desert were Drs. Mounir Chaura, in charge of the government dermatologic clinic, who makes routine examinations of the city's prostitutes, and Dr. K. Bayrakdar, in charge of the dispensary and of the health district of Meyadine, Syria, which is about 40 kilometers southeast of Deir-ez-Zor. I examined a large number of patients in the dispensary as well as in various Arab tent camps. In one of these, called Western Boukros, was a man with a single verrucous, papilloma-like excrescence in the right nasolabial fold which morphologically resembled a dry papilloma and was not unlike yaws except that the wartlike appearance was pronounced. A biopsy was made, as in all cases in the desert under most primitive conditions, and the histologic evaluation will be given later. In the tent camp of Meikhan several cases of enormous perforation of the septum nasi and palate were encountered. In others there was loss of nearly the entire frame and contour of the nasal orifice. Likewise, a number of peculiar scar formations over the cheeks were noticed. These are locally called *mourabea* in children and *moukouée* in adults. The natives distinctly differentiated them from *bejel.* Apparently they were healed lesions of Leishmania tropica ("oriental sore"). It was most interesting to notice that one such scar in an adult was situated over the left ala nasi, just above the margin of the nostril, which itself, however, was intact. The mucocutaneous border nowhere showed any trace of previous involvement. This apparent strictly localized and restricted cellular response in leishmaniasis is in contrast to the nature and extent of involvement in spirochetoses, syphilis as well as yaws.

In Damascus, Syria, Dr. A. H. Cacheco, a pediatrician, and Dr. J. el Khani, who had practiced dermatology and syphilology for twenty-four years in Damascus, holding formerly the chair at the university, had never even heard of the term *bejel* in western Syria, this expression being used only to the east, in the Euphrates valley. These physicians had never observed a case of yaws or heard of one among Arabs or Syrians. On the other hand, both had frequently seen congenital syphilis and syphilitic abortions among Bedouin Arabs. The present incumbent of the chair of dermatology at the Damascus University is Dr. Abdulgani Makmalgi, who also has charge of the municipal hospital for prostitutes. He emphatically stated that he frequently saw both congenital and "genital" syphilis in Arab Bedouin women. Yaws was never seen by him.

In Palestine I received all possible help from the British Mandate government through Colonel Heron, the director of the Palestine health service. He had had personal experience on frequent inspection trips that pointed out the interesting fact that *firjal* seems to be sporadic. He had me taken to a number of villages where *firjal* was endemic. In Hebron, Palestine, Dr. Shihab, who had had considerable experience, gave me valuable information. *Firjal* in Palestine presented an identical morphologic and, as biopsies proved, pathologic structure with *loath* and *bejel* in the eastern area of the region visited. In Haiffa, Palestine, I had several conferences with Dr. J. MacQueen, who is now the local district health officer for northwestern Palestine but was formerly in charge of the district south of Jerusalem. It was there that he observed and collected the material for his notable paper on the problem as existing in Palestine. He admitted, however, having also seen chancres on the lips and on the penis, although in most cases there were mucous patches in the oral cavity and the throat only. Few papular rashes and no papillomas had been observed by him.

In Halhul, near Bethlehem, Palestine, I observed a case of *firjal* with scars in the right inguinal region together with fungoid lesions and sinus formation spreading to the suprapubic region. The picture suggested lymphogranuloma venereum; histologic examination of biopsy material showed noncharacteristic granulation tissue with suppuration and fistula.

Dr. I. Katzenellenbogen, the outstanding dermatologist in Jerusalem, Palestine, had never seen yaws there in twelve years' practice. As to *firjal* and *bejel,* he was convinced that they are nothing but syphilis, with the well known peculiar prevalence of mucous patches often as the only clinical symptom besides the positive Wassermann and flocculation reactions. A similar opinion was voiced by that past master in syphilology and former co-worker of Neisser, Professor L. Halberstaedter, who is now living in Jerusalem.

In Beirut, Syria, Dr. Y. Raudah, who had practiced for eighteen years and was until recently professor of dermatology and syphilology at the American University, had never seen yaws but had frequently seen syphilis among Arab Bedouin women, as well as pemphigus syphiliticus neonatorum. The same experience was related by Dr. D. Escher, a colonel in the medical corps of the French army and at present professor of dermatology and syphilology at both the French and the American University. He was particularly outspoken in criticism of the unfortunate throwing of colloquial designations such as *bejel* into medical literature, instead of simply speaking of syphilis.

Besides these personal investigations in loco, the medical archives relative to the occupation of Mesopotamia during the World War were put at my disposal by the German government. Furthermore, the surgeon general of the German army, Heeres-Sanitaets-Inspekteur

Generaloberstabsarzt Prof. Dr. Waldmann, sent a number of questionnaires to former medical officers of that area. The only affirmative answer relating to yaws came from an ophthalmologist, Dr. Collin, stating:

> I have seen several cases of yaws during the World War in a Turkish hospital in Mardin, demonstrated as such to me by the attending Turkish physician; I was, of course, not able to decide if they were really yaws since I did not possess the special training or experience necessary to make any differential diagnosis.

On the other hand, Dr. F. Niedermayer stated in a report from the adjacent region of Persia (Iran) that in Isfahan he had observed in seven months typical syphilis in 65 per cent of a total of 8,000 patients. None of the observers knew the colloquial term *bejel*.

COMMENT

The purpose of my trip was to observe personally as many cases as possible and to obtain enough information from competent physicians for an accurate picture of the prevailing conditions with reference to the problem involved. It has been found necessary, therefore, to cite the experiences and opinions of a number of dermatologists and physicians in the preceding pages. Such information, when given by experienced and competent observers, was considered conclusive and dependable and accepted as a basis for the following comment.

As aforementioned, the problem was to ascertain whether the disease symptoms locally called in the various regions *firjal, loath, bejel, laghout, latta, abou-laghif* and *jifár* represented in all or in even a majority of instances the same disease entity, and if so, whether the entity was syphilis or yaws. It was of secondary importance to speculate why certain disease symptoms predominated whereas others were comparatively infrequent.

Among all competent physicians interrogated on that issue none had ever observed clinical manifestations characteristic of yaws, with the exception of Dr. Widad and Dr. Collin, whose information was furnished second hand and can reasonably be neglected on the strength of Dr. Collin's own admission that he himself did not possess the necessary knowledge to check on what was demonstrated to him by Turkish physicians as yaws. Dr. Widad's opinion and experience cannot be lightly dismissed. However, he was not in a position during the time of my visit to present even a single case of what he diagnoses as yaws. Furthermore, the only case in which biopsy material was taken by him and in which unquestionably there were frambesial histologic changes was that of a Negro pilgrim going from the Sudan to Mecca, Arabia. Hence, this man, not indigenous to the Iraq but a foreigner passing through, was not suffering from *bejel*.

As to the Arab Bedouin from Western Boukros, Syria, with a single verrucous, papilloma-like excrescence in the right nasolabial fold, the histologic picture (fig. 1) showed inflammatory changes unlike yaws but with epidermal architecture resembling that of naevus verrucosus. Plasma cells were not absent, but nothing like plasmocytoma could be detected anywhere.

As to the not infrequently observed eczema tyloticum of the palms and soles, in the vast majority of cases this did not resemble keratoderma plantare et palmare, so typical for late yaws but also encountered in syphilis. These dyskeratoses in the Iraq, Syria and Palestine are of the ordinary type and as such must be differentiated from keratoderma fram-

Fig. 1.—*Bejel* in an Arab Bedouin in Western Boukros, Syria, near Deir-ez-Zor. There was a solitary verrucous excrescence in the right nasolabial fold. The histologic changes were not suggestive of either yaws or syphilis, but were wartlike and inflammatory. Plasma cells were present in small numbers only, and there was no disease of the blood vessels.

boesicum, which has distinct features of its own which I have described elsewhere.[15] In the literature these two distinct types of keratoderma have been sadly confused, as, for instance, in plate I, fig. 2, and plate II, fig. 1, in a paper by Hudson.[16] The existence of positive reactions of the serum alone does not justify assuming a spirochetal pathogenesis unless the lesions present typical morphologic features and unless the tylotic eczematous changes disappear completely after specific treatment.

15. Hasselmann, C. M.: China M. J. **45**:1131-1155 (Dec.) 1931.
16. Hudson, E. H.: Ann. Trop. Med. **30**:3-6 (April) 1936.

I did not observe a single case or feature during my investigations which proved that yaws was in existence in the regions visited. Likewise, all observers agreed that they had never encountered yaws, Dr. Widad excepted.

As to the first point, whether everything called locally *firjal, loath,* and *bejel* represented clinical symptoms and manifestations attributable to the same disease entity, the answer must be in the negative. The majority of pharyngeal lesions are typical syphilitic mucous patches of the tonsils, pillars, uvula, tongue or palate, frequently accompanied by syphilitic laryngitis. Not seldom, however, large hypertrophic, sometimes pussy tonsils were also diagnosed as *bejel* and demonstrated as such to me. The same latitude exists to an even greater extent in the designation of cutaneous efflorescences, both by physicians and by patients. This became apparent from the histologic study of my biopsy material. Of 11 cases, for example, presented to me as instances of typical *firjal, loath, bejel* or *laghout,* in only 4 were definite syphilitic changes present. Clinically, 3 of them were diagnosed by me as instances of syphilis. In 1, a woman (fig. 2) showed a noncharacteristic ulceration of the right mamma, which was healing under antisyphilitic treatment. This explains the histologic picture of regenerative healing, with Langhans giant cells. In a case of *latta,* or *firjal,* beautiful oozing syphilitic papules were present all over the body, including the scrotum and penis. Microscopically, syphilitic endarteritis was pronounced. One woman had a typical tuberoserpiginous rash on the upper part of the chest. Histologic examination showed typical syphiloma (fig. 3). A young girl in Gibra had a syphilitic papular rash but no oral or pharyngeal involvement diagnosed as *bejel* (fig. 4).

Dermatologically, it was striking in how many cases a condition demonstrated as *firjal* or *bejel* impressed me as neurodermatitis (Brocq) and particularly as lichen obtusus corneus (Brocq). The latter condition is also known as prurigo nodularis (Hyde), urticaria chronica perstans (Fabry), *obtuse Papeln* (Unna) and tuberosis cutis pruriginosa (Huebner) and seems to be rather common in the Near East. Not less than 3 of 11 biopsy specimens presented typical neurodermatitis or prurigo nodularis histologically, thus confirming the tentative clinical diagnosis (fig. 5). It is possible that one or another patient supposedly suffering from *bejel* and even having a positive serologic reaction is syphilitic; yet his eruption is certainly not syphilid but neurodermatitis or some other disease. This coexistence of a systemic disease and a parasitic infection of the skin or an allergic condition is by no means a far-fetched idea but is often observed in all climates. The clinician, however, should endeavor to find one underlying cause rather than several for the symptoms.

Fig. 2—*Bejel* in a woman from Deir-ez-Zor, Syria. The section is from an ulcerated gumma of the right breast, showing healing necrosis with signs of regeneration and giant cells ("infectious granuloma," syphilis or tuberculosis). The patient was already receiving arsphenamine.

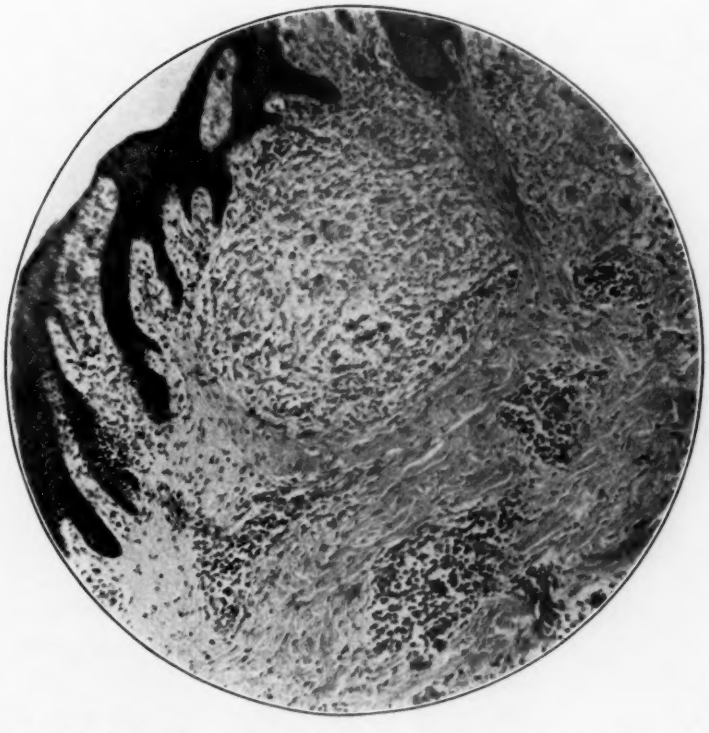

Fig. 3.—*Bejel* in a woman from Meyadine, Syria, near Deir-ez-Zor. Tubero-serpiginous syphilid was present on the chest. The histologic changes were typical of tertiary syphilis.

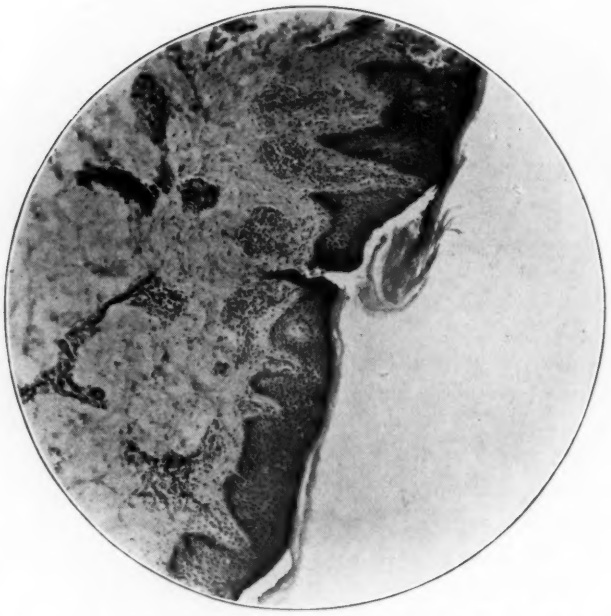

Fig. 4.—Dry papule from the knee of a young girl with *Bejel* from Gibra, Syria, showing histologic changes of syphilis.

Fig. 5.—*Bejel* in a man from Deir-ez-Zor, Syria. There was a dry, purplish papular rash on the knees and forearms. The section shows an acute inflammatory process with neurodermatitis.

In another case of *bejel* from the vicinity of Deir-ez-Zor, Syria, a boy had several impetiginous pustules on the neck and occiput confirmed as such microscopically.

It is therefore apparent that the general colloquial designation for any more or less papular, or even pustular, eruption with or without ulceration is often *firjal, loath* or *bejel,* despite the custom of referring likewise to any pharyngeal or oral lesion. This opinion is gained from my own studies and is based on the unanimous opinion of all observers whom I could personally interrogate. Only Hudson seems to hold a different view, judging from his publications.

It is the consensus also—Hudson again excepted—that abortions and miscarriages due to syphilis occur among Arab Bedouin women, although this is, perhaps, less readily admitted by the Nomad women. Even Hudson's own table showed that more miscarriages were reported by Bedouin fathers (9.2 per cent) than even by Christian fathers from the towns (8.8 per cent). The total figures gave a slightly different picture, owing to the well known reluctance of the Arab Bedouin women to admit failure to bear children, particularly sons. This leads to the question of transmission of syphilis among the Arabs.

I reluctantly became convinced that Hudson's plea for the simple exclusively nonvenereal mode of infection among the Arab Bedouins does not have a leg to stand on. In the first place, the terms "venereal" "nonvenereal," "genital" and "extragenital" are ill chosen in venereology. It is debatable if a syphilitic chancre on the finger should be considered nonvenereal when acquired during fellatio or perhaps during the spreading of the partner's labia majora, although in the latter case "sexual intercourse" or even the immissio penis into the vagina might not have been accomplished but interfered with, for instance, by some sudden outside disturbance. This chancre on the finger is certainly extragenital, yet most assuredly acquired during the pursuit of sexual gratification and therefore by no means nonvenereal. Likewise, a chancre of the lips, the tongue or even the nipple is surely extragenital, but must it be termed nonvenereal if due to kissing and perhaps venereal if due to cunnilingus? On the other hand, the syphilitic chancre on the penis following fellatio or on the clitoris following cunnilingus is a genital chancre, but strictly extragenitally acquired, whereas the syphilitic chancre on the lips from cunnilingus would be, mirabile dictu, the reverse, viz., an extragenital chancre but genitally acquired. Classification of either one as venereal or nonvenereal remains a moot question. Yet all these infections took place somehow during gratification of the basic instinct of sex. Hence, the absurdity of using such biased terms is obvious. They should be abandoned by all physicians who are not bound, religiously or intellectually, to conceive the pursuance of sexual intercourse and the questions of promiscuity and of sexual commodity

outside monogamic marital bounds to be directly connected with the great issues of right and wrong. Some persons desire to make a case regardless of the facts, instead of subordinating passion to the test of evidence and common sense.

Furthermore, the frequency or rarity of gonorrhea per se is by no means a yardstick for judging promiscuity, and application of it to decide if syphilis is contracted venereally or nonvenereally is not permissible. First, gonorrhea among primitive people often runs a much milder course, owing to the influence of diet and climate, and this mildness results in the patient's not paying enough attention to the condition. Second, since this is the case, it is not surprising to find anything but agreement among the physicians in the Near East as to the frequency of gonorrhea.

As to the absence of promiscuity among married Arab women, this is a myth, as was pointed out to me. There are much more freedom, liberty and privacy in the desert for women—walking, perhaps, for hours to fetch firewood or water—than in many western cities. Any approaching person is visible at a great distance, whereas two people close together and partly camouflaged by their voluminous robes remain hidden in the sand dunes, or at least their actions are undistinguishable from a distance.

The rarity of primary syphilitic sclerosis and of chancres, leading patients to seek medical treatment, is not surprising. As pointed out before, the initial lesion is not infrequently absent in syphilis. This is clinically well known and also experimentally observed. Furthermore, the Arab overlooks or does not consider serious the initial painless and possibly abortive and evanescent syphilitic lesion. This opinion was voiced long ago by von Düring [1] and by Levy-Bing and Gerbay.[8] It is shared by the local members of the medical profession. However, it is speculative to assume that the Bedouin Arab possesses a tendency to syphilitic mucous patches in the throat and mouth in order to explain their predominance. Such a racial peculiarity would be comparable, for instance, to the tendency of the Negro to annular syphilid, cardiovascular syphilis and new growth of connective tissues, as pointed out by Atkinson [17] and by Fox.[18] The significance of a racial disposition for a certain infection is well known to breeders of livestock. The disposition is to a large extent hereditary. Observations on animals and plants have established the fact that crossings of individual members of different races may reveal changes of such disposition. The degree of reaction and the type of manifestations of an infectious disease are governed by both the individual disposition and the prevailing stage of resistance, as well as by the racial factor.

17. Atkinson, E.: J. Cutan. Dis. **1**:15, 1883.

18. Fox, H.: Tr. Internat. Cong. **1**:198, 1907; Arch. f. Dermat. u. Syph. **113**:315-318, 1912.

At any rate, the preponderance of mucous patches is surprising. They are most frequently located on the pillars and the tonsils and less often on the tongue, lips and buccal mucosa. The involvement of the larynx proper and of the vocal cords is typical and has led, apparently, to the term *bejel*. All these constitute what must be classified as early syphilid. Late syphilitic changes, such as gummas and perforations of the septum nasi and of the palate, are frequently encountered. In certain Arab camps the percentage of these oral mucous patches belonging to the secondary stage was 80 per cent or even higher, in the absence of any other visible signs of syphilis except frequent subjective complaints referable to the heart. However, in a native population with a low standard of living, often deficient diet, malaria and helminthic infection, the tachycardia, dyspnea, subjective complaints of pulmonary oppression and fatigue are not per se conclusive evidence of syphilitic pathogenesis unless confirmed by roentgen examination and otherwise. Von Düring [19] and Levy-Bing and Gerbay [20] have already described identical observations stressing the striking prevalence of mucous patches, the latter among the Arabs of Morocco and northern Africa and the former among the tribes of Anatolia, which borders the region I visited.

It is possible that predilection for this site is favored by malnutrition, together with continuous irritation of oral sites most exposed to pressure and trauma during eating, masticating and swallowing. The marked sensitivity of the mucous membranes in the mouth is further evidenced by the frequent appearance of stomatitis after even small oral doses of mercurial preparations.

However, the assumption of malnutrition and trauma from irritation at the sites of predilection seems more reasonable than advocacy of a distinct strain of Spirochaeta pallida in order to explain the astonishing frequency of exclusive oral mucosal involvement. Such an assumption would seem to be disproved by the single fact that all other clinical cutaneous symptoms and lesions characteristic of syphilis and caused by ordinary S. pallida are concomitantly encountered in Arab Bedouins.

There is, however, yet another possibility, although only speculative. Since syphilis has existed in the country, as far as is known, at least for several generations, a goodly percentage of the population must have "hereditary" and "congenital" syphilis, although all clinical manifestations may be absent at some time or other. It can be argued a priori that repeated "superinfection" of such persons with syphilis could result in secondary syphilid at the portal of entry, if that was a locus minoris resistentiae, e. g., in the oral cavity or throat, if the latter

19. von Düring,[1a] p. 26.
20. Levy-Bing and Gerbay,[8] p. 460.

site is such. The underlying cause remains obscure until further evidence is forthcoming.

INVOLVEMENT OF BONES AND CARTILAGES

Mention should be made of the frequency of syphilitic periostitis and involvement of the nose and palate. Usually the tibias were affected, with a marked saber-like appearance and concomitant pains. Often other long bones showed similar symptoms.

Perforation of the septum and the palate, sometimes with destruction of the outer frame of the nose, seemed to be rather sporadic. Whereas in some localities few cases were found, many of them were present in others. The previously mentioned village of Hit, Iraq, was one where such perforation was comparatively common.

In cases of destruction of the outer nasal frame the appearance was different from that seen in the gangosa of late yaws. In gangosa

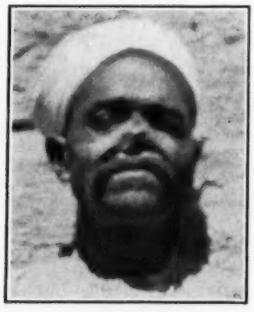

Fig. 6.—*Firjal* in an Arab in Beit-Jibreen, Palestine, showing almost complete loss of nasal frame with flaps of skin remaining. The picture was entirely unlike frambesial gangosa.

(rhinopharyngitis mutilans) there was invariably present a cutaneous frambesid of the face, spreading by continuity to the mucocutaneous border and effecting the osseous and cartilaginous tissues.

However, cases of mutilating nasal disease in Mesopotamia and Palestine conveyed at once the impression that something from underneath had begun to destroy the nasal frame and contour, rather than a process spreading by continuity from the adjacent skin of the face and nostrils, as in yaws. Often even some dermal flap covering the otherwise disfigured open nasal meatus had remained intact. Figure 6 allows one to visualize this appearance, which is quite distinct from that of gangosa.

CONCLUSIONS AND SUMMARY

Syphilis is designated by various colloquial terms in the area between the Mediterranean Sea and the Persian Gulf.

It is called *firjal* and *latta* in certain parts of Palestine, *loath* and *bejel* in the region of the Euphrates and the Tigris River valleys (Iraq and Syria), *laghout* in Lebanon, and *abou-laghif* and *jifár* in Trans-Jordan.

These same colloquial terms are indiscriminately applied sometimes to all sorts of cutaneous lesions and to oral and pharyngeal involvements which are not syphilitic.

Among dermal lesions so confused with syphilis are most frequently neurodermal cutaneous changes, prurigo nodularis and occasionally impetigo.

In some localities between 80 and 90 per cent of patients with syphilis present oral and pharyngeal lesions only; the majority of these patients are children.

Next in frequency seem to be syphilitic periostitis, osteitis and their sequelae, with cutaneous syphilid a long way behind.

Syphilitic abortion and miscarriage are common among the Arab Bedouins, but are less often reported and admitted than by Arabs from towns.

Although all other clinical and cutaneous symptoms and lesions characteristic of syphilis are often encountered concomitantly in Arab Bedouins, the reason for the striking prevalence of lesions exclusively of the mouth and throat remains obscure. It is possible either that these secondary syphilitic lesions arise at the site of superinfection favored by trauma and irritation, or that a peculiar tendency exists, influenced by race, climate, nutrition and other yet unknown factors.

The transmission of syphilis among Arab Bedouins exclusively by means other than sexual intercourse is a myth. Although what are with some bias and reservation commonly called extragenital and, at the same time, nonvenereal modes of infection may, perhaps, play some role in the present widespread prevalence of syphilis, the influence of promiscuity on the dissemination of syphilis among Bedouin Arabs seems to be by no means negligible.

The mutilating involvement of the nasal orifice seen among these people is typical of syphilis but distinct from nasal gangosa seen in late yaws.

I have observed no case of proved yaws, nor heard of any, originating in the region in question.

Aside from the preponderance of lesions exclusively on the oral mucosa in a people of whom a considerable percentage must have latent and congenital syphilis, the disease runs the same course in the Near East as elsewhere. Hence, it is misleading and confusing to call it by different, local and colloquial names.

FAVUS INVOLVING A TOE NAIL

REPORT OF A CASE

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Infection by Achorion schoenleinii is not common in the city of New York. Among 74,046 patients admitted to the Skin and Cancer Unit during 1935, 1936 and 1937, there were only 18 with favus. In a previous communication [1] attention was directed to the concomitant involvement of the glabrous skin in about 30 per cent of all patients having infection of the scalp by A. schoenleinii. The finger nails are more rarely affected by this micro-organism, and invasion of a toe nail must be uncommon. The following case, in which there was such a localization, is unique in our experience.

REPORT OF CASE [2]

M. B., a single woman aged 28, a bookkeeper, was previously presented before the Manhattan Dermatologic Society on Dec. 14, 1937. She was first observed in November 1937, when she sought advice concerning an area of alopecia on her scalp. She was born in the United States, of parents who had come from Poland. Her mother's scalp was reported to be normal, except for thinning of the hair, and her father's scalp was free of disease. A brother and 4 sisters had normal scalps. The patient remembered having the bald spot for ten years. At first it was covered with a yellow crust, which the patient removed by picking from time to time. The left thumb nail had been abnormal for from eight to ten years. The condition of the right great toe nail was first noticed four or five years ago.

Examination revealed an area of almost total alopecia about the size of a quarter in the left parietal region. A few strands of hair were growing in the center of the patch. Another, smaller area was present on the right side of the vertex. The patches were irregular, and their surface was shiny and appeared atrophic. The left thumb nail was hypertrophic but was firm and translucent. The right great toe nail was yellow, friable and lusterless and showed subungual hyperkeratosis. The distal half of the nail plate was separated from its bed.

The trichophytin test gave a negative result. Fungi were not observed in extemporaneous preparations from the scalp and the finger nail but were demon-

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From the Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital, Columbia University.

1. Lewis, G. M.; Rosenfeld, H., and Hopper, M. E.: Favus of the Glabrous Skin: Report of Three Cases, M. Rec. **145**:189 (March 3) 1937.

2. Lewis, G. M.: Favus of the Scalp and the Toe Nail, Arch. Dermat. & Syph. **37**:907 (May) 1938.

strated in material from the toe nail. A. schoenleinii was grown on culture of material from this site. It would thus appear that the infection on the scalp and the thumb nail had spontaneously resolved, but that the toe nail was still an active focus of the disease.

COMMENT

In most cases favus of the nails develops secondarily to the infection of the scalp. When the scalp is involved, a careful search for evidence of invasion of other sites should be made. This clinical inspection should include the nails of both hands and feet. If the clinical signs warrant, cultural studies should be undertaken.

The rarity of the involvement of the toe nails is attested by the paucity of reports of such occurrence. According to Pélardy,[3] who

Appearance of the right great toe nail, from which A. schoenleinii was isolated.

wrote a monograph on favus, Virchow reported the first case of favus of the toe nails in 1856. Purser,[4] Fabry,[5] Lindstrem,[6] Vidal and Brocq,[7]

3. Pélardy, H.: Le favus des ongles (onychomycose favique), Thesis, Paris, no. 205, 1907, p. 36.

4. Purser, J. M.: Two Cases of Onychomycosis, Dublin Quart. J. M. Sc. **40**:353, 1865.

5. Fabry, J.: Ueber Onychomycosis favosa, Arch. f. Dermat. u. Syph. **22**:21, 1890.

6. Lindstrem, A. A.: Atrophie des ongles idiopathique, abstracted, Ann. de dermat. et syph. **8**:805, 1897.

7. Vidal and Brocq, quoted by Heller, J., in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1927, vol. 13, pt. 2, p. 184.

Fischer,[8] Donato[9] and Robinson[10] have all reported cases of concomitant involvement of one or more toe nails. In the case studied by Fischer[8] the great toe nails were involved, showing longitudinal ridges with yellowish spots, which were followed by crucial markings on the matrix of the nail. Donato[9] reported the case of a boy aged 16 who had favus for eleven years and when observed had a widespread distribution of the disease. All the toe nails were infected. The patient observed by Robinson[10] was a woman aged 26, who had favus of the scalp and the finger nails and whose toe nails showed evidence of a fungous infection. A. schoenleinii was isolated from the scalp and the finger nails, but no mention was made of cultural studies of material from the toe nails.

SUMMARY

A case of favus is reported in which there were active involvement of a toe nail and evidence of healed lesions in the scalp and on one thumb nail. The patient was an American-born woman, whose parents came from Poland. No other member of the family had favus, and the origin of the disease was not discovered. No prior report of proved favus of a toe nail in the United States was found.

57 West Fifty-Seventh Street.

301 East Nineteenth Street.

200 West Fifty-Ninth Street.

8. Fischer, F.: Favus des Grosszehennagels, Zentralbl. f. Haut- u. Geschlechtskr. **17**:413 (July) 1925.

9. Donato, G.: Tigna favosa generalizzata con onicomicosi, Gior. ital. di dermat. e sif. **68**:1055 (June) 1927.

10. Robinson, L. B.: Favus of the Scalp and Finger Nails, Arch. Dermat. & Syph. **36**:433 (Aug.) 1937.

CUTANEOUS MANIFESTATIONS OF TULAREMIA

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Since 1910, when Pearse [1] published the first description of the clinical manifestations of tularemia, the number of cases reported annually has increased greatly. The disease is no longer considered a medical rarity. Owing largely to the work of the United States Public Health Service, the literature is replete with material on practically all the aspects of the condition. This presentation will therefore not embody the general considerations of the infection.

It has been said that the principal aid to the diagnosis of the condition is "to have the disease in mind." This is becoming even more necessary, because the constant additions to the lists of animal hosts and insect vectors have exploded the original idea that tularemia is limited to regions of the country where particular species of rodents and insects are found. Simpson,[2] who has contributed and correlated much of the knowledge of the disease, was in 1933 [2b] able to find mention of 22 animals and insects in which tularemia had occurred. Most of these have been proved sources of human infection, and it is highly probable that all of them are capable of transmitting the disease to man.

From the Department of Dermatology and Syphilology, University of Virginia Medical School.

1. Pearse, R. A.: Insect Bites, Northwest Med. **3**:81 (March) 1911.

2. Simpson, W. M.: (*a*) Tularemia, New York, Paul B. Hoeber, Inc., 1929; (*b*) Tularemia: A Summary of Recent Researches, with a Consideration of One Hundred and Three Dayton Cases, Ohio State M. J. **29**:35 (Jan.) 1933; (*c*) Tularemia (Francis' Disease), U. S. Nav. M. Bull. **26**:825 (Oct.) 1928; (*d*) Tularemia (Francis' Disease): A Clinical and Pathological Study of Forty-Eight Nonfatal Cases and One Rapidly Fatal Case, with Autopsy, Occurring in Dayton, Ohio, Ann. Int. Med. **1**:1007 (June) 1928; (*e*) Tularemia (Francis' Disease), Internat. S. Digest. **6**:131 (Sept.) 1928; (*f*) Tularemia (Francis' Disease): A Clinical and Pathological Study of Sixty-One Human Cases Occurring in Dayton, Ohio, Long Island M. J. **23**:526 (Sept.) 1929; (*g*) Tularemia (Francis' Disease): Report of Four Additional Cases, Ohio State M. J. **24**:860 (Nov.) 1928; (*h*) Tularemia: A Summary of Recent Investigations and a Consideration of the Dayton Experience with Eighty-Eight Cases, Illinois M. J. **60**:207 (Sept.) 1931; (*i*) Recent Developments in Tularemia (Francis' Disease), with a Report of Eleven Additional Cases, J. Lab. & Clin. Med. **15**:311 (Jan.) 1930.

It is therefore evident that the disease must be widespread and not limited to any occupational or social group.

Kavanaugh,[3] in a complete review of the clinical aspects of the disease, mentioned cases in which there is but slight febrile reaction. The condition in these he has termed "ambulatory tularemia." If in such a case there should be only a primary ulcer or a generalized eruption, the proper diagnosis possibly would not be made. An occasional obscure diagnosis might be cleared up with the proper laboratory procedures.

In 1927 Netherton [4] first discussed the various types of cutaneous reaction which had been recorded up to that time. The object of this paper is to supplement Netherton's original compilation with those manifestations which have subsequently been reported in the literature and which we have observed.

The standard texts mention only briefly that generalized cutaneous eruptions occur in this disease. Since, however, the incidence of such eruptions has been reported as from 5 per cent (Simpson [2a]) to 18.7 per cent (Kavanaugh [3]) and that of nodular lymphangitis as from 20 to 30 per cent it would seem that these manifestations are of some importance.

CLASSIFICATION

As knowledge of tularemia has increased, there have been several adequate classifications offered. However, that used by Kavanaugh [3] seems the most adequate and will be used throughout this paper. He divided the disease into (1) primary cutaneous tularemia (ulceroglandular and glandular); (2) primary ophthalmic tularemia (oculoglandular), and (3) cryptogenic tularemia.

A classification of the dermatologic manifestations logically includes three types: (1) the primary ulcer; (2) the nodular lymphangitis extending upward from the site of the primary lesion, and (3) the generalized eruption. These types will be discussed in order, and an attempt will be made to define the clinical picture and the histologic changes in each.

THE PRIMARY LESION

In the 123 cases reported by Kavanaugh,[3] there were primary lesions in 102 while 6 were classified as instances of primary cutaneous tularemia without a primary lesion but with regional glandular enlargement. Of the remaining 15 cases, the disease in 6 was of the primary ophthalmic type and in 9 was classified as cryptogenic—that is, there

3. Kavanaugh, C. N.: Tularemia: A Consideration of One Hundred and Twenty-Three Cases, with Observations at Autopsy in One, Arch. Int. Med. **55**: 61 (Jan.) 1935.

4. Netherton, E. W.: Tularemia with Reference to Its Cutaneous Manifestations: Report of Case, Arch. Dermat. & Syph. **16**:170 (Aug.) 1927.

was no visible lesion, regional glandular involvement or local manifestation. Of the 48 cases which are studied here because there was some type of generalized cutaneous eruption, in 13 there was probably no evidence of a point of inoculation. It is, therefore, evident that a large percentage of tularemic patients present this primary ulceration, usually on the hand. However, in the accumulating literature primary lesions have been reported on practically every portion of the body, such variance in location occurring particularly in cases in which infection arises from the bite of the tick, or deer fly.

The ulceration is usually single but may be multiple and small. There is a period of incubation of from one to seven days between the time of inoculation and the appearance of the primary lesion. During this period the patient usually complains of chills, sweating and fever. Peculiarly, he often notices enlargement of the regional lymph nodes and occasionally nodular lymphangitis before the appearance of the primary sore.

Grossly, the ulcer begins as a small inflammatory papule, which gradually spreads, ruptures and discharges a necrotic central area. This leaves a rather deep ulceration with well defined border and a depressed necrotic base (fig. 1 *A* and *B*), which is painful and sensitive. It usually persists for several weeks, despite any form of therapy, and several investigators have determined that surgical incision or excision simply prolongs the process. After several weeks the lesion heals spontaneously by replacement with scar tissue (fig. 1 *C*, *D* and *E*).

Patients with a painful primary ulceration, marked local lymphadenopathy and acute febrile reaction do not present a great diagnostic problem. However, in that small group of cases in which the febrile reaction is minimal or absent, and particularly in those in which the primary ulcer is in some unusual location, there are several diseases which may suggest themselves before tularemia. When the primary ulceration appears on the fingers or hands, bone felon, nonspecific infection from injury or chancre would probably be suspected. When the ulceration appears about the jaw or cheek, one might consider anthrax or actinomycosis. Indeed, the primary lesion has been reported even in the pharynx.[5] In the rare case in which the lesion appears in the region of the genitalia, accompanied with enlargement of the inguinal nodes, primary syphilis, lymphogranuloma venereum or chancroid would seem the most probable diagnosis at first. If the ulceration were of several weeks' duration when first seen, a tuberculous origin might be suspected.

The early diagnosis of the primary tularemic ulcer at times is by no means easy. Histologic study, though suggestive, can rarely do more

5. McGovern, F. H.: Primary Tularemic Ulcers in Pharynx, J. A. M. A. **107**:1629 (Nov. 14) 1936.

than determine that the lesion is a granuloma. The demonstration of Bacillus tularensis in the histologic section is possible, but the procedure is rather highly specialized. The agglutinins for B. tularensis typically

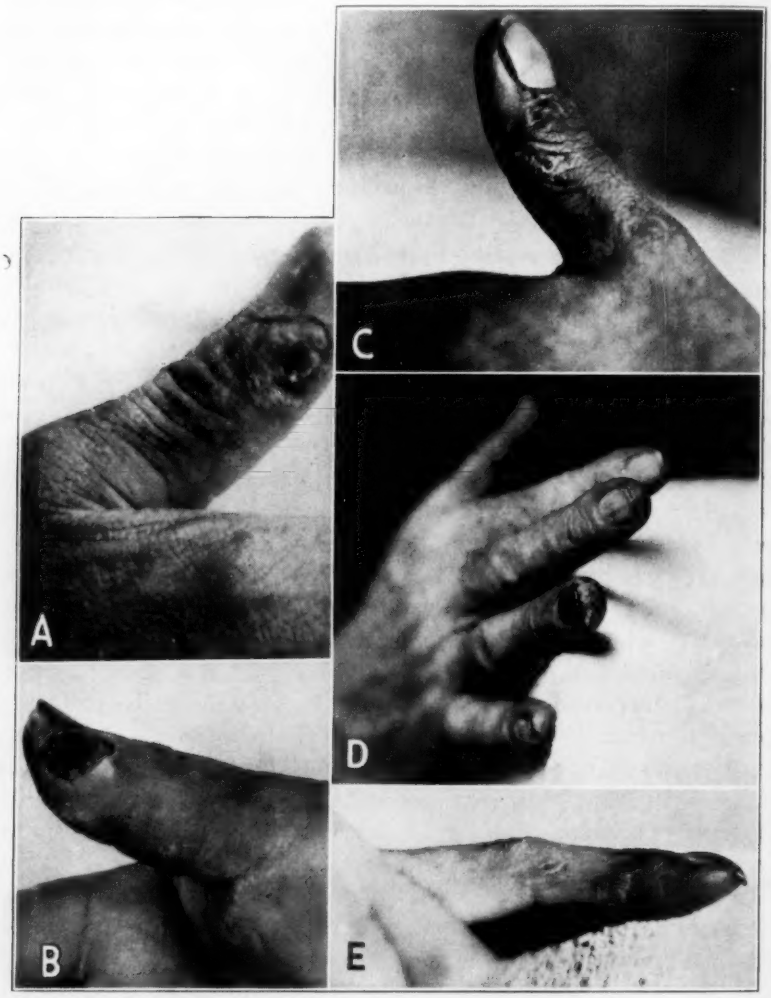

Fig. 1.—*A* and *B*, typical primary tularemic ulcers (*B* illustrates case 48). *C*, *D* and *E* (collection of Dr. W. M. Simpson), healing primary ulcerations. *C* shows the picture ten weeks after onset and *D* and *E* six weeks after onset. Necrosis of the nail is present in *D*.

do not appear in the blood until the second or third week of the disease. Therefore, early diagnosis by this method is not practicable. Demonstration of the causative organism by injection of a portion of the

ulcer or of the regional lymph nodes into a guinea pig, though trustworthy, requires from five to seven days for a positive diagnosis, demands the facilities of a laboratory and presents real dangers to the person performing the test. The intradermal test, developed by Foshay [6] in 1932, offers perhaps the best method of early diagnosis. The reaction usually becomes positive within four days after the onset, may be obtained easily and is a means of rapid diagnosis.

As this presentation is made primarily from the dermatologic point of view, it seems unnecessary to detail the findings in the primary ophthalmic type of the disease.

The first histologic study of a primary tularemic ulcer was made by Netherton [4] in 1927. Subsequent studies of the lesion in various stages of development have been made by Goodpasture and House,[7] by Bunker and Smith,[8] by Belote [9] and by Foulger, Glazer and Foshay.[10] The findings of all these workers have been in reasonable agreement. They have been summarized and augmented by Lillie, Francis and Parker.[11] Our only purpose in presenting the histologic observations here is to make this paper complete.

In a section from a 29 day old lesion furnished us by Dr. E. W. Netherton the epithelium surrounding the ulceration showed moderate hyperkeratosis. The granular layer was continuous and showed a thickness of from four to six cells. The prickle cell layer was edematous and the interpapillary projections broadened. The basal layer was intact, and no wandering cells were present in the epithelium.

Within the ulcerated area there were marked acanthosis, with a moderate degree of intercellular and intracellular edema, and a dense inflammatory infiltration throughout. On the periphery of the lesion this had a perivascular character, but toward the central area it became universal throughout the corium. It was made up chiefly of lymphocytes, but scattered throughout were a moderate number of epithelioid cells and a small number of plasma cells and fibroblasts. A few giant cells were seen in the lower portions of the section.

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6. Foshay, L.: Tularemia: Accurate and Earlier Diagnosis by Means of Intradermal Reaction, J. Infect. Dis. **51**:286 (Sept.-Oct.) 1932.

7. Goodpasture, E. W., and House, S. J.: The Pathologic Anatomy of Tularemia in Man, Am. J. Path. **4**:213 (May) 1928.

8. Bunker, C. W. O., and Smith, E. E.: Tularemia: Report of Four Cases, One Fatal, with Autopsy Report, U. S. Nav. M. Bull. **26**:901 (Oct.) 1928.

9. Belote, G. H.: Tularemia: Report of an Unusual Case, Arch. Dermat. & Syph. **23**:926 (May) 1931.

10. Foulger, M.; Glazer, A. M., and Foshay, L.: Tularemia: Report of a Case, with Postmortem Observations and a Note on the Staining of Bacterium Tularense in Tissue Section, J. A. M. A. **98**:951 (March 19) 1932.

11. Lillie, R. D.; Francis, E., and Parker, R. R.: The Pathology of Tularaemia, National Institute of Health Bulletin 167, United States Treasury Department, Public Health Service, 1937.

Throughout the corium the blood vessels stood out distinctly. Many were dilated, and there was great endothelial proliferation. In some vessels this effected a practically complete closure. The one sweat

Fig. 2.—Section from the margin of primary tularemic ulcer removed on the twenty-ninth day, showing moderate acanthosis, dense inflammatory infiltration and free necrotic tissue within the ulceration. In the lower central portion a blood vessel exhibits marked endothelial proliferation. Hematoxylin and eosin; × 160.

gland which occurred in the section was apparently normal. No pilosebaceous elements were present (fig. 2).

THE SUBCUTANEOUS NODULES

The occurrence of subcutaneous nodules along the lymphatic chain from the site of the primary inoculation is a common and well known manifestation of tularemia. In the literature there are many records of tularemic nodular lymphangitis; because of the almost uniform clinical picture, individual cases will not be discussed here. This type of nodular lymphangitis probably occurs in from 20 to 30 per cent of cases of tularemia. The nodules appear early in the course of the disease, and there may be from one to thirty on a single extremity,

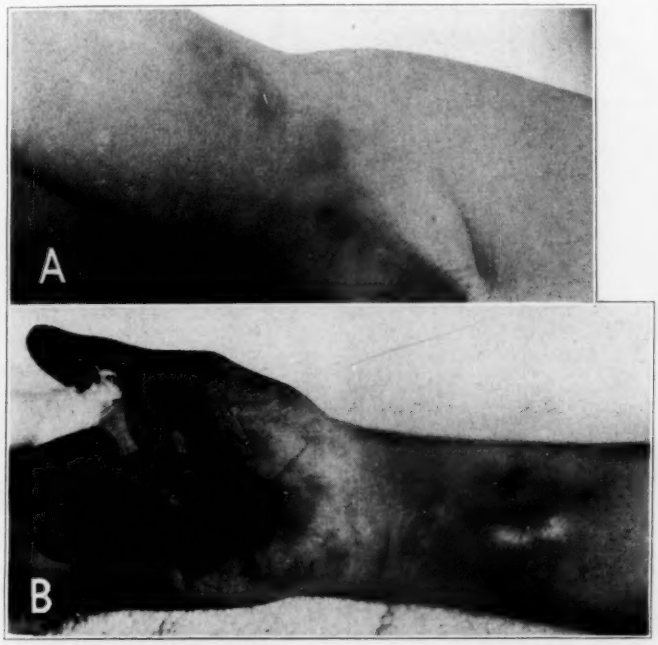

Fig. 3.—*A*, nodular lymphangitis and axillary adenopathy of arm six weeks after onset. *B*, suppurating nodular lymphangitis six weeks after onset (collection of Dr. W. M. Simpson).

usually the forearm and arm. They have, however, occurred on the leg, and in the primary ophthalmic type nodules on the cheek of the infected side have been reported.[3]

These nodules are at first firm and definitely subcutaneous, but as they progress they become attached to the skin, which in turn becomes erythematous and glazed and later presents a dusky purplish hue (fig. 3*A*). As the process continues, these nodules may fluctuate and rupture spontaneously (fig. 3*B*) or subside intact. Kavanaugh[8] noted that pain was present only in cases in which suppuration occurred.

The differential diagnosis is usually between sporotrichosis and tularemia, although the latter disease is much more common in this country. With this cutaneous manifestation also there are always cases in which the presenting sign does not at first suggest the correct diagnosis. Atypical primary cutaneous tularemia without a primary lesion but with indolent nodular lymphangitis and adenitis is easily confused with cutaneous tuberculosis or late syphilis.

The diagnosis of nodular lymphangitis can usually be established quickly by the procedures mentioned in connection with the primary lesion. If the disease is of more than two weeks' duration, the agglutination test is fairly reliable, but before that time the intradermal test is preferable. Biopsy and inoculation of animals have the same disadvantages as were outlined in connection with the first type but are

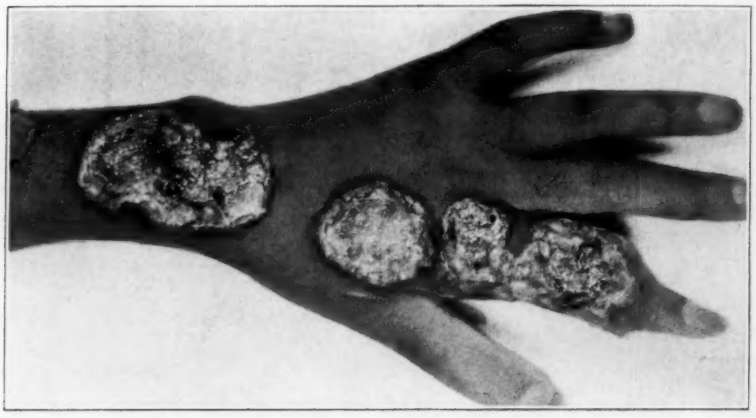

Fig. 4.—Unusual fungating lesions along lymphatic chain twenty-one weeks after onset. Bacillus tularensis was isolated from these lesions several months after onset (Blackford and Smith [12]).

trustworthy if practicable. Differentiation from syphilis, tuberculosis and sporotrichosis can be effected by appropriate laboratory procedures.

Recently Blackford and Smith [12] reported a unique variation of the usual nodular lymphangitis: A young Negress had concomitant secondary syphilis, and one month after the appearance of the original tularemic ulcer a series of ulcerations developed along the regional superficial lymphatic vessels (fig. 4). These ulcerations assumed a fungating and granulomatous nature and persisted for many months. Microscopic sections showed typical necrotic and granulomatous tissue; an unusual feature was the demonstration of B. tularensis five months

12. Blackford, S. D., and Smith, D. C.: Prolonged Virulence of B. Tularense in Human Tissue: Case Report, South. M. J. **29**:1062 (Nov.) 1936.

after the onset of the disease. Portions of these lesions produced tularemia in guinea pigs. Twenty-one months after the onset of the disease the same result was obtained with samples of granulation tissue from the amputation stump.

Knowledge of the histologic changes in the subcutaneous nodules has been based on specimens taken from the wrist, the forearm and the arm. The first observers to report these pathologic changes were Permar and Weil.[13] Subsequently, similar lesions have been studied by Francis and Callender [14] and by Shelmire.[15] Unfortunately, original microscopic observation of an uncomplicated nodule cannot be reported here. However, in the recent bulletin on the pathologic picture of tularemia prepared by the United States Public Health Service, Lillie and Francis [11] collected the previous pathologic reports and thoroughly restudied the material themselves. Their summation of the observations is as follows:

> The subcutaneous nodules have regularly shown caseous centers in which leucocytes are usually not identifiable. The margins usually show a sometimes incomplete fringe of palisaded epithelioid cells or fibroblasts, sometimes with collagen fibrils. As in old tubercles circumferential collagen fibrils may appear between the palisaded epithelioid cells and the caseous area. Peripheral to this epithelioid zone there is a zone of irregularly or circumferentially disposed fusiform epithelioid cells or fibroblasts. These are mingled in earlier cases with macrophages and in all with variable numbers of lymphocytes, plasma cells, and thickened capillaries. Inconstantly there are a few multinucleate giant cells. Fibrosis also appears in this peripheral zone. Externally the lymphocyte and plasma cell infiltration extends about vessels and cutaneous glands into the surrounding tissues. Sometimes miliary epithelioid cell granulomata with giant cells and peripheral lymphocytes are also present in surrounding tissues.

THE GENERALIZED ERUPTION

The most interesting cutaneous phase of tularemia is the generalized eruption. Reports of its occurrence have appeared intermittently in the literature since the disease was first described. Practically all the primary elements, such as macules, papules, vesicles and pustules, have been recorded. In 1927 Netherton [4] collected the cases previously described, but since that time apparently there has been no detailed study. In 1928 Francis and Callender,[16] in a comprehensive study of the disease, collected brief notes on eruptions in 28 cases. Several of the

13. Permar, H. H., and Weil, G. C.: The Histopathology of the Subcutaneous Lesions in Tularemia in Man, Am. J. Path. **2**:263 (May) 1926.

14. Francis, E., and Callender, G. R.: Tularemia: The Microscopic Changes of the Lesions in Man, Arch. Path. **3**:577 (April) 1927.

15. Shelmire, B.: Tularemia Resembling Sporotrichosis, Arch. Dermat. & Syph. **19**:918 (June) 1929.

16. Francis, E., and Callender, G. R.: Symptoms, Diagnosis and Pathology of Tularemia, J. A. M. A. **91**:1155 (Oct. 20) 1928.

cases had been reported in more detail elsewhere. These will be included in the present report. A survey of the literature revealed 43 cases in which some type of generalized eruption had been described in sufficient detail to make the diagnosis seem unquestionable and to permit classification. To this group we shall add 5 cases. In some instances the information given was incomplete. Hence, our statistics on some points are not on 48 cases.

Color, sex and age do not seem to be factors in determining the likelihood of the patient's showing a generalized eruption. Among cases in which these data were given, there were 37 white and 2 Negro patients, 25 being male and 14 female. The ages ranged from 9 to 69 years.

Patients exhibiting the generalized eruption may have any one of the types of tularemia. Of the 41 cases in which the disease was classified, it was of the primary cutaneous type in 27, in which the initial lesion in the majority was on a hand or a finger; of the primary ophthalmic type in 9, and of the cryptogenic type in 5. From the data given, it appears that in most of the remaining 7 cases the disease was of the last type. This again illustrates that many patients may have no external manifestation other than the secondary eruption.

The patients showed no characteristics of the period of incubation which distinguished them from the usual tularemic patient. In the 27 cases in which this feature could be determined, the average period of incubation was three days, with extremes of fourteen hours and seven days.

In 29 cases data were given concerning the time between the onset of the disease and the appearance of the eruption. The shortest time which elapsed before appearance of the eruption was five days, while the longest (Coan [17]) was three months. Because the latter figure was at such variance with the others, it has been omitted in the determination of the average. In the remaining cases, analysis shows that the eruption began during the first week in 6 cases, during the second week in 13, during the third week in 8, during the fourth week in none and during the fifth week in 1. The second week is, therefore, the usual time of onset of the eruption and the sixteenth day the average time.

Information regarding the duration of the eruption was in many instances scanty. Because of this and because several of the patients died while the cutaneous manifestations were still present, there were only 20 cases in which this factor could be tabulated with any degree of accuracy. The shortest duration of the eruption was two days, while the longest was in a case reported by McGarvey,[18] in which there

17. Coan, G. L.: A Case of Tularemia, with Unusual Aspects in Differential Diagnosis, J. Michigan M. Soc. **27**:825 (Dec.) 1928.

18. McGarvey, W. E.: Oculo-Glandular Tularemia: Case Reports, J. Michigan M. Soc. **33**:304 (June) 1934.

were recurrent manifestations for over one hundred and thirteen days. Because of the great variance of this figure from the others, it is omitted in the determination of the average. In the remainder the average duration of the eruption was twenty-one and nine-tenths days.

An attempt was made to discover if patients showing cutaneous manifestations were more febrile than the average tularemic patient. It was felt that if this were true it might indicate an increased degree of toxemia, which may in some way be interpreted as the determining factor in the appearance of the eruption. However, in most of the recorded cases no reading of temperature or only one was given. A review of the cases in which the temperature was recorded showed that it varied from normal to 105.4 F. In the cases observed at this hospital the temperature curve was approximately typical for tularemia in general.

The type of eruption in most cases could be determined with a reasonable degree of accuracy. Most of the patients presented more than one type of lesion. Twenty-three exhibited papules, 14 macules, 17 pustules, 3 papulovesicles, 5 vesicles, 1 urticarial wheals and 1 nodule (figs. 5 and 6). One case is on record in which the secondary eruption occurred only in the mouth, where it took the form of shallow ulcerations.[19]

Although the eruption may be generalized or involve any one or several regions of the body, most patients have it on the upper portion of the trunk and the upper extremities. In some instances the eruption was unilateral or at least more marked on one side. Almost invariably this was the side on which the primary lesion occurred. Most patients with tularemia of the primary ophthalmic type presented a facial eruption, which was occasionally unilateral. In case 39, in which the primary ulcer occurred on the left leg, there were a few macules over the body, but the eruption was largely concentrated in the left groin. In case 16 there was a papular eruption on the same side of the face as the affected eye. In cases 7, 8 and 44 a pustular periorbital eruption was present on the same side, but in all of these few data were given, and the pustules may actually have represented multiple foci of inoculation. It appears, therefore, that, although the noxious material is undoubtedly borne by the blood, lymphatic drainage plays some part in the localization of the eruption. Lesions appeared on the back in 21, the face in 17, the neck in 16, the chest in 15, the arms in 16, the hands in 13, the legs in 12, the abdomen in 9 and the feet in 3 patients.

A condensed analysis of the individual cases is given in the table.

19. Pessin, S. B.: Tularemic Pneumonia, Pericarditis and Ulcerative Stomatitis, Arch. Int. Med. **57**:1125 (June) 1936.

Detailed Summary of Cases of Secondary Eruption

Case Number	Author	Color	Sex	Age	Type	Period of Incubation, Days	Duration (Days) from Onset to Eruption	Duration of Eruption, Days	Type of Eruption	Distribution of Eruption
1	Francis;[a] Parker and Spencer [b]	W	M	36	C	?	8	15	Papular, erythematous	Head, arms, dorsa of hands
2	Francis;[a] Parker and Spencer [b]	W	M	33	C	?	10	?	Papular, erythematous Pustular	Neck, forehead, hands, knee Arms, forearms
3	Francis [a]	?	?	?	?	?	?	?	Annular raised areas, violaceous	Neck, trunk
4	Francis [a]	?	?	?	?	?	7	10	Painful blotches, erythematous	Neck, cheeks, forehead
5	Francis [a]	?	?	?	?	?	?	?	"Extreme herpes"	
6	Francis [a]	?	?	?	O	?	?	?	Pustular	Cheek
7	Francis [a]	?	?	?	O	?	?	?	Pustular	Area around eye socket (same side)
8	Francis [a]	?	?	?	O	?	?	?	Pustular	Area around eye socket (same side)
9	Ledingham and Fraser [c]	W	M	38	C	?	?	?	Acneform	Back
10	Ledingham and Fraser [c]	W	F	34	C	?	?	?	Acneform	Back
11	Maclachlan, Fetter and Cratty [d]	W	M	35	U	?	14	25+	Pustular Coalescent blotches, erythematous	Forearms Dorsa of hands
12	Farrand [e]	W	M	42	U	?	?	?	Papular, erythematous	Dorsa of hands
13	Flick [f]	W	M	45	O	2	21	55+	Paronychial soreness "Patches of eruption"	Fingers Hand, forearm
14	Armstrong and Kavanaugh;[g] Kavanaugh [h]	?	?	?	?	?	?	?	Acneform	Shoulders, back
15	Kavanaugh [h]	?	?	?	?	?	?	?	Acneform	Shoulders, back
16	Kavanaugh [h]	W	M	26	O	2	—7	?	Papular, maculopapular	Face, neck (same side)
17	Whitels and Anthony [i]	W	F	?	U	—7	?	3+	Papular, violaceous	Neck, trunk
18	Netherton [j]	W	F	34	U	1	24	10+	Erythematous papules, plaques "Erythema multiforme"	Neck, arms, hands, thighs
19	Rutledge [k]	W	F	58	U	5	6	14 died	Papular Papulopustular	Chest, back Abdomen, thighs
20	Gudger [l]	W	M	32	U	3	16	34 died	Maculopapular, erythematous	Chest, abdomen
21	Foulger, Glazer and Foshay [m]	W	F	37	U	4	?	22 died	Papulopustular	Chest, thigh (opposite side)
22	Hartman [n]	W	M	?	U	4	21	36 died	Papular	Back
23	Simpson [o]	B	F	33	U	6	22 26	3 7	Maculopapular Maculopapular	Arm (same side) Leg (same side)
24	Watts [p]	W	M	48	U	4	20	2	Urticarial	
25	Simpson [q]	W	M	69	U	2	12	?	Macular, maculopapular	Face, chest
26	Simpson [q]	W	M	28	U	4	10	60+	Acneform	Neck, forearms, dorsa of hands
27	McGarvey [r]	W	M	17	O	5	42 ?	? 113+	Papular Circumscribed maculopapular	Cheek Upper lip
28	McGarvey [r]	W	M	16	C	6	7	113+	"Red pimples" "Another eruption"	Hands, feet Face
29	[illegible]	W	M	[illegible]	U	4	21+	4	Vesicular and pustular desquamating, universal "Blisters under nails"	
30	Hanson and Green [t]	W	F	?	U	7	21+	—70	Deep-seated erythematous, painful nodules	Anterior parts of legs

28	McGarvey [r]	W	M	16	C	6	?	113+	Circumscribed maculopapular "Red pimples" "Another eruption"	Cheek Upper lip Hands, feet Face
29	[illegible]	W	M	[illegible]	U	[illegible]	[illegible]	[illegible]	[illegible] "Blisters under nails"	[illegible]
30	Hanson and Green [t]	W	F	?	U	7	21+	—70	Deep-seated erythematous, painful nodules	Anterior parts of legs
31	Redland [u]	W	M	37	U	2	23	37+	Pustular	Shoulders, buttocks
32	Harper [v]	W	M	45	U	3	?	?	Pustular	Back, chest
33	Kirkwood [w]	W	F	43	U	3	14	?	Papular	Back, wrist (same side)
34	Foshay [x]	W	M	?	O	?	—31	4	Papulovesicular exanthem	Head, forearms, hands (treated with serum)
35	Foshay [x]	W	F	?	U	?	13	?	Macular, papular, vesicular exanthem	Scalp, neck, chest, back, arms (treated with serum)
36	Foshay [x]	?	?	?	U	?	?	?	Papulovesicular exanthem	Face, neck, chest (treated with serum)
37	Blackford [y]	W	F	38	U	2	?	—60	Acneform Violaceous splotches	Back Back, knees, legs
38	Kerlin [z]	W	M	39	U	?	5	10+	Macular, erythematous to vesiculation, to pustulation	Universal
39	Kerlin [z]	W	M	?	U	4	?	5	Macular, violaceous	Groin (same side); trunk (few)
40	Junkin [a']	W	M	25	U	2	14	21	Papular, erythematous	Face, neck, shoulders, legs
41	Dvorak-Theobald [b']	W	F	32	O	2	15 19	14 9	Erythematous plaques Urticarial, purpuric	Knees Arms, legs
42	Coan [c']	W	F	22	?	?	90	6	Papular	Arms, trunk
43	Riley [d']	W	M	36	U	2	—40	24	Papular, violaceous	Neck, back, hands
44	Stealy [e']	W	M	18	O	?	—14	—50	Pustular	Cheek (same side)
45	Hitch and Smith	W	M	23	?	1	?	16 died	Papular	Chest, shoulders
46	Hitch and Smith	B	M	9	U	2	? 7	9 died	Macular Purpuric, bullous	Universal Arm, chest abdomen
47	Hitch and Smith	W	F	55	U	3	—12	?	Papular, erythematous	Dorsa of hands
48	Hitch and Smith	W	F	40	U	1	12	29	Papular, maculopapular, erythematous; "erythema multiforme"	Neck, chest, back, arms

U indicates ulceroglandular; O, oculoglandular, and C, cryptogenic.

a. Francis, E.: Tularemia, in Christian, H. A., and Mackenzie, J.: Oxford Medicine, New York, Oxford University Press, 1926, supp., vol. 4, pt. 3, p. 955.

b. Parker, R. R., and Spencer, R. R.: Six Additional Cases of Laboratory Infection of Tularemia in Man, Pub. Health Rep. **41**: 1341 (July 2) 1926.

c. Ledingham, J. C. G., and Fraser, F. R.: Tularemia in Man from Laboratory Infection, Quart. J. Med. **17**: 365 (July) 1924.

d. Maclachlan, W. W. G.; Fetter, W. J., and Cratty, A. R.: Two Cases of Tularemia, J. A. M. A. **86**: 749 (March 13) 1926.

e. Farrand, B. C.: Tularemia, with Report of Eleven Cases, Am. J. M. Sc. **172**: 853 (Dec.) 1926.

f. Flick, J. B.: Tularemia, Ann. Surg. **83**: 737 (June) 1926.

g. Armstrong, R. M., and Kavanaugh, C. N.: Primary Ophthalmic Tularemia (Conjunctivitis Tularensis): Five Cases with Pathology of Eye, South. M. J. **25**: 749 (July) 1932.

h. Footnote 3 in text.

i. Whitels, W. R., and Anthony, E. J.: Tularemia in Iowa, J. Iowa M. Soc. **16**: 188 (April) 1926.

j. Footnote 4 in text.

k. Rutledge, L. H.: A Fatal Case of Tularemia in Minnesota, Minnesota Med. **10**: 97 (Feb.) 1927.

l. Gudger, J. R.: Tularemic Pneumonia: Case, J. A. M. A. **101**: 1148 (Oct. 7) 1933.

m. Footnote 10 in text.

n. Hartman, F. W.: Tularemic Encephalitis: Pathology of Acute Tularemia with Brain Involvement and Coexisting Tuberculosis, Am. J. Path. **8**: 57 (Jan.) 1932.

o. Footnote 2[h] in text.

p. Watts, H. F. R.: A Case of Tularemia, New England J. Med. **202**: 329 (Feb. 13) 1930.

q. Footnote 2[i] in text.

r. Footnote 18 in text.

s. Mease, J. A., Jr.: Tularemia from Opposums, J. A. M. A. **92**: 1042 (March 30) 1929.

t. Hanson, E. C., and Green, R. G.: Tularemia in Minnesota, J. A. M. A. **92**: 1920 (June 8) 1929.

u. Redland, A. J.: Tularemia: Case Report, Mil. Surgeon **63**: 715 (Nov.) 1928.

v. Harper, C. W.: Tularemia: Report of Two Cases, South. M. J. **20**: 450 (June) 1927.

w. Kirkwood, T.: Tularemia, with Report of Seven Cases, Illinois M. J. **51**: 401 (May) 1927.

x. Foshay, L.: Tularemia Treated by a New Specific Antiserum, Am. J. M. Sc. **187**: 235 (Feb.) 1934.

y. Blackford, S. D.: Tularemia in Differential Diagnosis: A Review of Thirteen Cases, Virginia M. Monthly **58**: 10 (April) 1931.

z. Kerlin, W. S.: Tularemia: Review of Literature with Report of Cases, New Orleans M. & S. J. **81**: 723 (April) 1929.

a'. Junkin, H. D.: Two Unusual Cases of Tularemia, Northwest Med. **26**: 415 (Aug.) 1927.

b'. Dvorak-Theobold, G.: Oculoglandular Tularemia, Am. J. Ophth. **15**: 112 (Feb.) 1932.

c'. Footnote 17 in text.

d'. Riley, E. T.: Tularemia: Case, Kentucky M. J. **26**: 197 (April) 1928.

e'. Stealy, C. L., and Miller, D.: Tularemia: Report of Cases, California & West. Med. **30**: 418 (June) 1929.

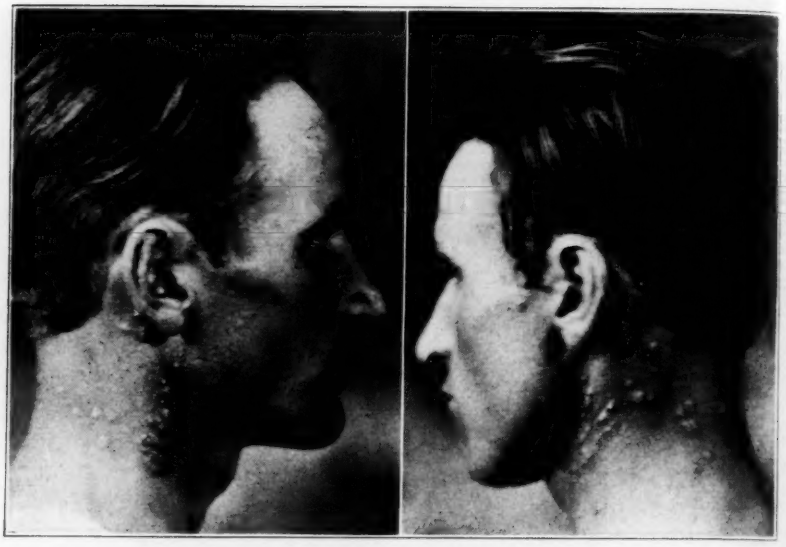

Fig. 5 (case 40).—Papular eruption thirty days after onset (Junkin, H. D.: Two Unusual Cases of Tularemia, Northwest Med. **26**:415 [Aug.] 1927).

Fig. 6 (case 48).—Generalized maculopapular eruption on fifteenth day of the disease, showing many characteristics of erythema multiforme. The lesions on the left forearm are of iris type.

In practically all recorded cases there were data concerning the agglutination titer. This factor was in no way remarkable and varied from 1:20 to 1:1,280.

Because the secondary eruptions of tularemia may assume the form of many of the usual elementary lesions of the skin, a discussion of their differential diagnosis would be limitless; therefore, the subject will not be entered into here, beyond the statement that the eruption most often resembles the "toxic eruptions" or erythema multiforme.

Prior to this report the histologic changes of the generalized eruption have been described in only 1 instance. This description, by Netherton,[4] was made of a specimen from a "well defined erythematous slightly raised plaque." Clinically, the eruption from which the sections we shall describe were taken must have closely resembled Netherton's. The histologic observations also agreed reasonably well. Netherton's section was taken on the twenty-ninth day of the disease, while our first section was removed on the fifteenth, four days after onset. Recently Lillie and Francis [11] have studied other sections from Netherton's patient, and to his original description they have added:

> The epidermis contained a small unilocular vesicle containing a number of small mononuclear cells, apparently lymphocytes. The lateral and basal walls of the vesicle were lined by partly separated, strongly oxyphil, coagulated necrotic prickle cells. The surrounding prickle and basal cells showed perinuclear vacuolation. The roof was formed of the stratum corneum and a layer lining the vesicle of centrally rarefied, marginally densely stained coagulated necrotic prickle cells.

The secondary lesion studied here was from one of the large coalescent areas of edematous infiltration removed from the arm in case 48. The section was stained with hematoxylin and eosin and with Giemsa's stain and showed the corneous layer of the epidermis to be thin and scaling, with no evidence of parakeratosis. The stratum granulosum was thinned throughout and in some areas absent. The prickle cell layer was somewhat thin and showed evidences of moderate intercellular and intracellular edema. There were a few scattered vacuolated cells but no evidence of vesicle formation. The interpapillary projections were flat and broad, apparently due to pressure from below. The basal layer was edematous and in many areas indistinct. These areas showed invasion of the epidermal layers by the infiltrating cells of the corium, and throughout the prickle cell layer was scattered a moderate number of these cells.

The corium showed edema and rather marked cellular infiltration. These changes were much more marked in the upper half. Here the collagen fibers were swollen, indistinct and fragmented. Throughout this portion was a dense infiltration composed chiefly of round cells, with dense collections of fibroblasts in many areas. There were a few epithelioid cells and an occasional polymorphonuclear leukocyte, but

no plasma or giant cells. The cellular infiltration was concentrated perivascularly, and the vessels themselves were dilated and presented swollen endothelial cells. In the lowest portion of the section the infiltrate was scanty and strictly perivascular. A small portion of one sweat gland was visible and showed a mild surrounding infiltration (fig. 7).

A biopsy specimen from a papular lesion in case 37 was available. This was rather poorly stained but showed changes similar to those

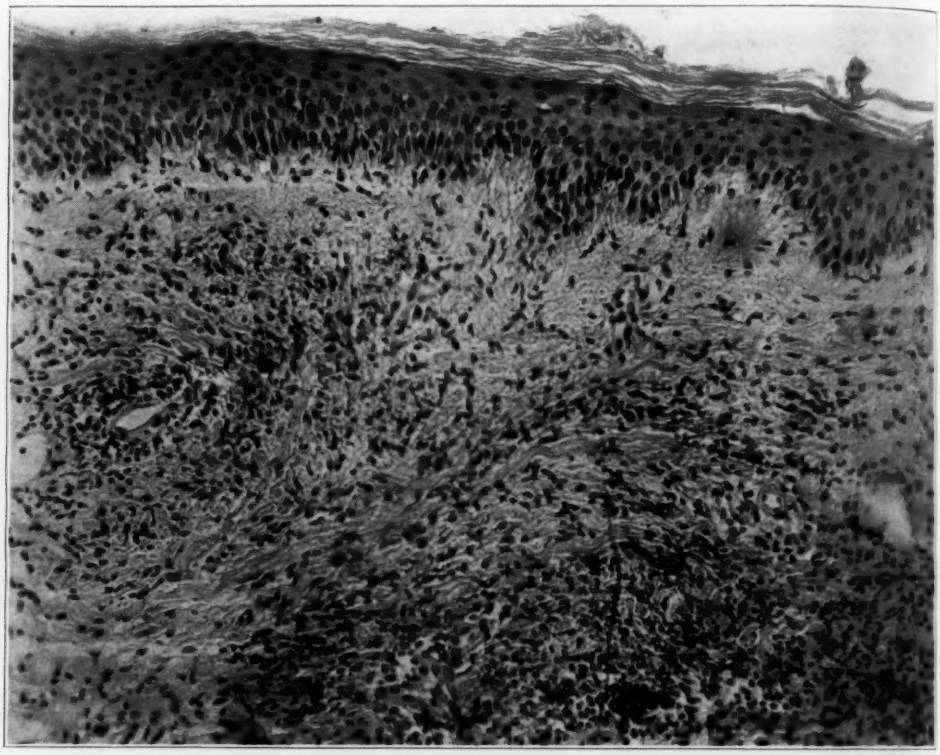

Fig. 7. (case 48).—Section from a large maculopapular lesion. The stratum granulosum is diminished. There are generalized edema and flattening of the interpapillary projections. The corium shows infiltration with lymphocytes and fibroblasts, which tend to concentrate perivascularly. A few of these cells are seen in the epidermis. Hematoxylin and eosin; × 160.

just described. A complete sweat gland and duct were present and showed a moderate surrounding lymphocytic and fibroblastic infiltration.

COMMENT

It has long been known that the bacteremia in tularemia ceases by the fourteenth day. Repeated inoculation of guinea pigs with patients'

blood has never given positive results later than this. However, inoculations of guinea pigs with material from the internal organs, the primary lesions and the nodular lymphangitis has often given positive results for much greater periods. The only instance in which tissue from a lesion of the generalized eruption has been injected into a guinea pig was in the case of Netherton.[4] This material, injected on the twenty-ninth day of the disease, failed to produce any pathologic change in the experimental animal.

In case 48 we obtained a large specimen of one of the cutaneous lesions for biopsy; after the gross blood had been removed by absorption, it was washed several times in sterile saline solution and divided into two portions; a guinea pig was inoculated subcutaneously with each portion. These animals showed no evidence of disease at any time. Five cubic centimeters of blood was obtained from the patient at the same time and this, after defibrination, was injected into 1 guinea pig subcutaneously and another intraperitoneally. These animals remained healthy throughout the period of observation. This does not afford conclusive proof that the secondary lesions are not infective. It does, however, add some support to the contention that the generalized cutaneous manifestations of this disease are toxic. It might be added that the average time of onset of the eruption is the sixteenth day (in many cases much later), while the bacteremia has been proved conclusively to be absent by the fourteenth day. The multiple types of lesions form an additional argument that the eruption is not a reaction following the cutaneous implantation of blood-borne organisms but is simply an eruption resembling erythema multiforme which is seen in many febrile diseases. As Miller and Taussig [20] have said, "specific eruptions probably do not occur in tularemia." This opinion has been advanced by Netherton,[4] Markley,[21] Baer [22] and others.

Therefore, this multiform cutaneous manifestation of tularemia should be of particular interest, for it presents tularemia as one more specific etiologic agent which can be responsible for a "toxic eruption."

The unusual type of disease in which, although the onset may be severe, the patient subsequently suffers only a mild febrile reaction or none has been termed "ambulatory tularemia" by Kavanaugh. The patient in case 25 was said to have been traveling about when the eruption was noticeable. In cases of this type, in which the eruption does not appear until the patient has become almost afebrile, the cutaneous manifestation may be the only symptom. This is particularly true of

20. Miller, H. E., and Taussig, L. R.: Tularemia, Arch. Dermat. & Syph. **19**:378 (March) 1929.

21. Markley, A. J.: Tularemia: A Disease of Increasing Dermatologic Importance, Arch. Dermat. & Syph. **27**:666 (April) 1933.

22. Baer, H. L.: Tularemia, Pennsylvania M. J. **38**:24 (Oct.) 1934.

the cryptogenic type of the disease. Figure 8 shows the average of the high and low daily temperatures in 9 cases of tularemia which was sufficiently severe to indicate hospitalization but was not characterized by severe fever. Against this curve is plotted the number of patients (selected from the group analyzed in the table) showing an eruption for each day of the disease. This demonstrates that in some patients the temperature may well have subsided before the onset of the eruption, suggesting that an occasional case of erythema multiforme or toxic eruption of obscure cause may justify an intradermal or agglutination test for tularemia.

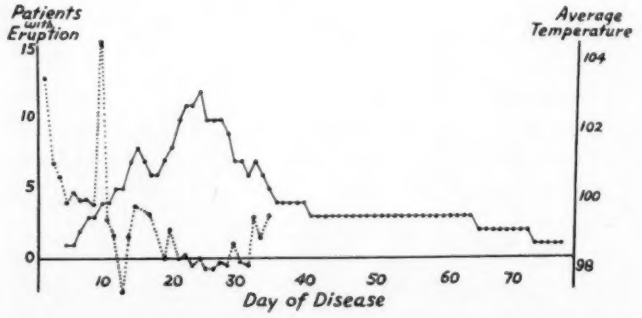

Fig. 8.—Graph demonstrating the fact that many patients may show a cutaneous eruption when relatively afebrile. The solid line represents the number of patients with an eruption on each day of the disease. This was obtained from the table. The dotted line shows the average high and low temperature for 9 selected hospital patients who had no excessive fever. The base line represents normal temperature and no patients with eruption.

SUMMARY

The primary ulcer of tularemia and the nodular lymphangitis seen in this disease are described clinically and microscopically.

The cases of tularemia in which there has been a generalized eruption are collected from the literature, and several new cases have been added. The characteristic features of these eruptions are discussed and analyzed. The histologic structure of these lesions is given.

Experimental inoculation with tissue from the generalized eruption supports the contention that the eruption is toxic.

A generalized eruption may be the only suggestive sign in a case of tularemia.

808 Professional Building.

University Hospital.

STEATOCYSTOMA MULTIPLEX CONGENITALE

TEN CASES IN THREE GENERATIONS

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Numerous cases of steatocystoma multiplex have been reported, including some of general distribution. Mount [1] included these and a case of his own in his article on this subject and fully summarized the clinical features. Some of the features observed in my series have not been recorded previously.

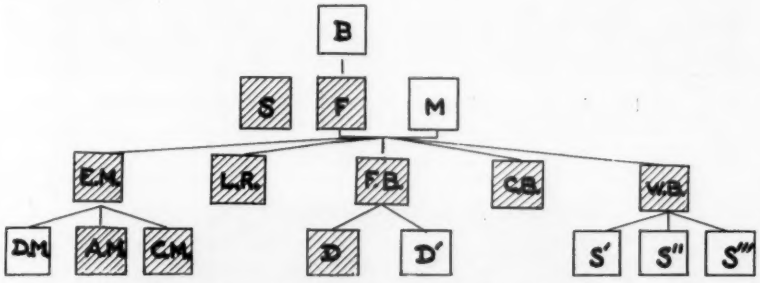

Fig. 1.—Genealogic chart (dark areas show those affected). *F* is the father; *M*, mother; *S*, father's sister; *B*, father's brother; *EM*, patient; *AM*, patient's son; *DM* and *CM*, patient's daughters; *LR*, patient's sister; *FB*, patient's brother; *D* and *D'*, daughters of *FB*; *CB*, patient's brother, unmarried; *WB*, patient's brother; *S'*, *S''*, *S'''*, sons of *WB*.

The cases herein reported were presented at the February 1937 meeting of the Manhattan Dermatological Society.[2]

REPORT OF CASES

History.—E. M., a woman aged 39, seen at the Jersey City Medical Center, presented multiple cutaneous tumors. She gave the genealogic data shown in figure 1.

The patient was one of 13 children; 2 brothers (1 of whom had ichthyosis) were killed in accidents. Four children died shortly after birth; 2 were living and free of lesions. The mother (fig. 1, *M*) died of cancer of the stomach, with metastasis.

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1. Mount, L. B.: Steatocystoma Multiplex, Arch. Dermat. & Syph. **36**:31 (July) 1937.

2. Satenstein, D. L.: Steatocystoma Multiplex Congenitale, Arch. Dermat. & Syph. **36**:632 (Sept.) 1937.

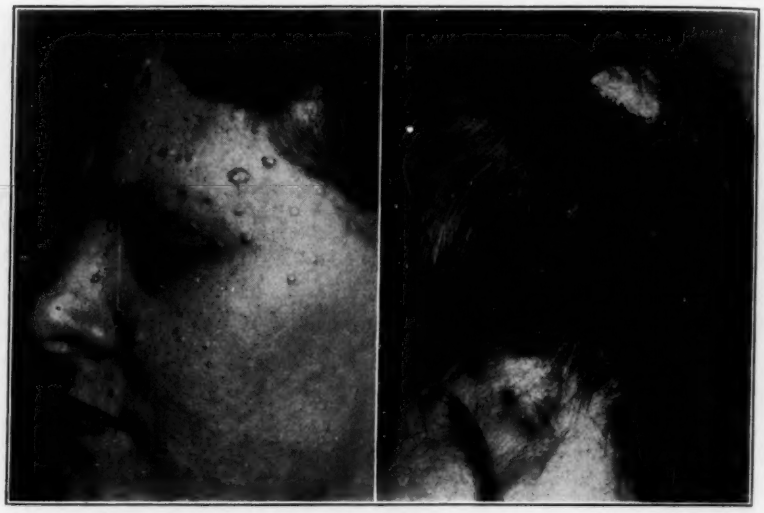

Fig. 2.—Patient in second generation of those affected

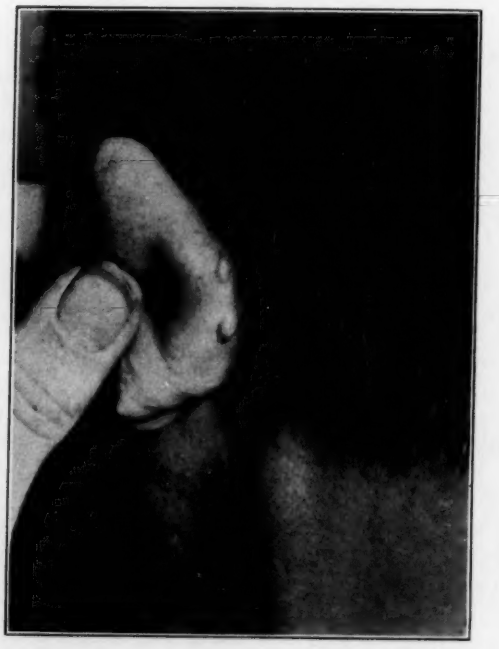

Fig. 3.—Patient in third generation of those affected.

The affected members had numerous lesions, all of which were present at birth. None had ever complained of any associated subjective symptoms. The sites of predilection were the face, forehead, scalp, chest, back and extremities. In all the patients the abdomen and lumbar regions were free of lesions. One of the brothers had lesions on the legs. These lesions were larger than any presented by the other patients.

Examination.—The cases of this patient (E. M.); her son (A. M.), aged 15, and her daughter (C. M.), aged 19, have been studied more completely than the others. Small round and oval cysts were present, varying in size from that of a pinhead to 1 cm. in diameter and in color from that of the skin to brown and almost black. Some were firm and others soft. The surrounding skin was normal, and there was no acne. A cheesy material could be expressed at times. The lesions were painful when secondarily infected, as were many of the tumors on the scalp, and unless these were incised the infection and swelling persisted for many months.

Laboratory Tests.—The Wassermann and the Kahn test were negative. The blood counts were within normal limits. Urinalysis revealed no abnormalities.

Histologic Study.—Low Power: At the edge of the section, extending from the upper to the deeper layers of the cutis, was a fairly large cavity, the walls of which were entirely made up of numerous blood vessels and a marked cellular infiltrate (granulation tissue). Remnants of hair were present. Within the cavity was loosely laminated horny material. Throughout the upper layers of the cutis there was moderate dilatation of the vessels, with a sparse cellular infiltrate about them.

The epidermis showed no important change.

High Power: In the granulation tissue (replacing the cyst wall) the cellular infiltrate was chiefly of giant cells, many of which contained numerous nuclei. Also, there were many large cells with round vesicular nuclei and a foamy cytoplasm (similar to the cells composing the sebaceous glands).

COMMENT

Mount found in reviewing the 18 recorded cases (including his own) that three times as many men as women were affected. In my series there were as many women as men. Lesions were found in three generations and in each instance were present at birth. Therefore, it is proper to name this dermatosis steatocystoma multiplex congenitale. Moreover, the cases substantiate the view that the dermatosis belongs in the nevus group. Klausner [3] described 3 cases. The first 2 involved brothers, and in the third dermatosis had been present in three generations. He concluded that in spite of the delayed appearance of the lesions there were a congenital anlage and a hereditary factor in steatocystoma multiplex. Lisi [4] expressed a similar view and therefore called the disease "widespread trichosebaceous cystic nevus."

3. Klausner, E.: Ueber angeborene bzw. heriditäre Cystenbildung im Bereiche der Talgdrüsen, Dermat. Wchnschr. **65**:711, 1917.

4. Lisi, F.: Nevo-cistico-trichosebaceo diffuso del tronco, Gior. ital. di dermat. e sif. **73**:1325, 1932.

SUMMARY

1. Ten cases of steatocystoma multiplex congenitale are recorded.

2. An equal number occurred in each sex.

3. The origin of the cysts was probably from the pilosebaceous apparatus, as shown by the presence of remnants of hair and sebaceous glands in the cyst wall.

4. The term steatocystoma multiplex congenitale is a proper one, as all the patients were born with the disease.

921 Bergen Avenue.

SYMMETRIC ERYTHEMA OF THE SOLES

"SYMMETRICAL LIVIDITIES OF THE SOLES OF THE FEET" (PERNET)

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RALEIGH, N. C.
AND
ROBERT F. HANSEN, M.D.
DES MOINES, IOWA

In 1925 Pernet [1] presented 2 cases of a symmetric eruption of the soles. He referred to this entity as "Symmetrical Lividities of the Soles of the Feet." This disease apparently was not reported again until 1933, when Parkhurst [2] recorded in detail 2 additional cases and mentioned that Jamieson [3] in a personal communication had said he probably had seen 5 or 6 similar lesions.

The first case of Pernet's [1] was that of a 13 year old girl who had preexisting morphea. Symmetric areas suddenly appeared on the soles, in the region of the heels. These areas he described as slightly raised, with well defined borders, bluish red and having an edematous blebby look but containing no fluid.

In his second case, that of a boy of 14, there were the same symmetric pale cyanotic slightly raised areas with somewhat reddened borders about the heels. Both patients had hyperhidrosis.

Parkhurst's [2] first case was that of a student nurse aged 20, who presented "several slightly burning dusky red patches the size of large and medium coins, arranged symmetrically on the heels." Hyperhidrosis, bromidrosis and sogginess of the soles were present. The condition had been present for about a year but was immediately relieved by application of a 25 per cent solution of aluminum chloride locally. It recurred when treatment was stopped but promptly vanished when the therapy was resumed. The author, on first examination, considered the possibility of toxic erythema or of fixed dermatitis medicamentosa. He was, however, unable to offer additional support of either diagnosis.

Parkhurst's [2] second case was that of a student aged 21, who presented "on the heels symmetrical, discrete, slightly elevated, livid patches the size of a large coin." This condition was of a week's duration and

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From the Department of Dermatology and Syphilology, University of Virginia.

1. Pernet, G.: Symmetrical Lividities of the Soles of the Feet, Brit. J. Dermat. **37**:123-125 (March) 1925.

2. Parkhurst, H. J.: Symmetrical Lividities of the Soles, Arch. Dermat. & Syph. **27**:663-665 (April) 1933.

3. Jamieson, R. G., cited by Parkhurst.[2]

asymptomatic. "Hyperhidrosis and bromidrosis were present." Under application of the same astringent solution this eruption disappeared in about a week.

The cases Jamieson [8] mentioned in his communication to Parkhurst were not described in detail. One of his patients had the condition recurrently. The attacks cleared under application of a 1 per cent solution of formaldehyde and a dusting powder. Hyperhidrosis was a constant feature.

As the information given in these 4 cases is all that is available on this clinical picture, it is believed that a detailed study including a report of the histologic changes will be of value.

REPORT OF CASES

CASE 1.—E. H., a native white boy aged 16, came to the dispensary on March 29, 1937. One week previously he had experienced a marked burning sensation of the soles and toes. Examination revealed a symmetric eruption. Because his symptoms increased, he entered the hospital two days later.

Past History.—In July 1936 the patient had had an eruption lasting four days, which he believed was identical except that it was slightly posterior to the present site. He had been seen in this hospital for chronic tonsillitis, acute infection of the upper part of the respiratory tract, bronchitis, malnutrition, gonorrheal urethritis, and traumatic lesions of the extremities. He had recovered from an attack of "flu" three weeks prior to this admission.

Present Illness.—The eruption had appeared suddenly and simultaneously on both feet nine days before. There had been no change after the first day. Concomitantly hyperhidrosis was noted. The eruption did not itch but burned continuously, the sensation being more pronounced at night. He described it as "burning like a blister rubbed by a shoe." He stated that he had not been exposed to excessive heat, chemicals or new socks or shoes. He had not gone barefooted or changed his usual daily routine. There had been no unusual local pressure. He had not taken ergot as a drug, nor had he eaten rye bread. A detailed allergic history revealed nothing of importance. The only previous treatment was soaking the feet in warm salt water one time.

Physical Examination.—The patient was slender, fairly well nourished and intelligent. There were slight injection of the mucous membrane of the pharynx, evidence of poor dental hygiene, absence of tonsils, mild ethmoiditis, and occasional medium rhonchi in the hilar areas. Stereoscopic roentgenograms of the chest showed no abnormality. A detailed neurologic examination showed nothing essentially abnormal.

Dermatologic Examination.—The skin, with the exception of that of the feet and the right thigh, was normal. On the thigh there was a pigmented flat nevus. The plantar skin presented an eruption which was remarkably symmetric (fig. 1). Extending across each sole was an extremely well defined dusky erythematous band from 0.2 to 0.5 cm. wide. The medial portion of the band was at the root of the great toe and from that point extended laterally in an irregular but always identical course to a point approximately 1 cm. posterior to the root of the fourth toe. The skin posterior to this point was entirely normal. That anterior presented a soggy, lusterless appearance and gave one the false impression that there was a minute collection of fluid just beneath the corneous layer. The involved skin

was slightly erythematous but when viewed in some lights had a perceptible bluish hue. The plantar pad of the distal phalanx of each toe presented the same type of lesion, though in none was the limiting erythematous line well defined (figure 1 shows several of these fairly well). All the lesions were slightly raised. Along the anteromedial aspect of each great toe were three elongated, angular erythematous lesions about 1 cm. long. They were unquestionably the same type as those on the soles and particularly resembled the limiting bands previously described. These lesions were symmetric, though this feature was not as striking as in the plantar involvement. Hyperhidrosis of the feet was present, and there was no interdigital scaling or maceration. The interior of the patient's shoes showed no irregularity.

Course.—A biopsy specimen was taken from the margin of one of the lesions on the lateral surface of the left great toe. The histologic picture will be described subsequently. Without local or specific treatment the marked erythematous hue of the eruption began to subside in four days, so that by the time of discharge, on the seventh day, about all one could see was slightly fawn-colored, shiny, somewhat

Fig. 1 (case 1).—Photograph showing the well demarcated symmetry of the lesions. The roughly circular lesions on the plantar pads show fairly well on several of the toes.

hypertrophic skin where the original lesions had been. Fourteen days later the feet were normal.

CASE 2.—R. K., a native white boy aged 17, was admitted to the hospital on Nov. 13, 1937, complaining of hyperhidrosis of the feet and redness of the soles.

Past History.—In 1927 tonsillectomy and adenoidectomy had been done in this hospital, and later the patient had been treated in the dispensary for chronic otitis media. He had been admitted in 1932 because of moderately severe diabetes mellitus and since that time had been followed at irregular intervals. His glycosuria had been under rather poor control, though at no time had he been dangerously ill. In 1935 he had had tenosynovitis, which cleared promptly, and later he had been admitted because of catarrhal jaundice, which subsided without complications. In 1936 he had had an eruption of the soles, which he believed was identical with the present one and which cleared without treatment in about two weeks. An infection of the upper part of the respiratory tract had subsided shortly before admission.

Present Illness.—Three weeks before admission the patient noticed hyperhidrosis of the feet. Two weeks later he examined his feet and found on each sole a small red area, which rapidly enlarged to involve a large portion of the plantar surface. There was no itching or burning, but the soles occasionally "hurt a little," especially at night. He stated that there had been no unusual exposures of the feet and that he had not worn new socks or shoes. A detailed allergic history showed nothing of consequence and no evidence pointing to ergotism. He had taken no treatment except his usual doses of insulin.

Physical Examination.—The patient was well developed and nourished and mentally sluggish. The mucous membrane of the nasopharynx was injected and covered with mucus. A detailed neurologic examination showed slight impairment of the sense of taste, absence of the gag reflex and inability to distinguish between heat and cold on the involved areas of the soles. The sensation of light touch was normal everywhere, while pin pricking was not described as painful on the back or on the feet.

Dermatologic Examination.—There were many old scars on the thighs and knees. The soles presented a remarkably symmetric eruption in the form of continuous plaques involving the entire breadth of the anterior arch, extending posteriorly over approximately the lateral half of the longitudinal arch and then expanding medially to involve the whole plantar surface of the heel (fig. 2). This eruption extended up on the sides of the foot about 1 cm., except around the achilles tendon, where it continued upward approximately 3 cm. (fig. 3). The outline of the eruption, although irregular, was always bilaterally identical. The medial portion of the longitudinal arch was clear except for a few isolated, roughly circular patches in the midportion along the border; although the size was not exactly the same, the position on the two feet was symmetric (fig. 2). The dorsum of the foot and toes was unaffected. The characteristic features of the lesion were much the same as in case 1—that is, the involved area was slightly raised and limited by an irregular but well defined erythematous border and faded off into a diffuse central portion which was soggy, lusterless and slightly blue. Hyperhidrosis was marked. There was no interdigital abnormality, and the patient's shoes showed no irregularities which could account for the lesions.

Course.—The sugar content of the blood varied between 286 and 44 mg. per hundred cubic centimeters. Glycosuria was inconstantly present, but with routine diabetic management the sugar content of both blood and urine was brought under good control before discharge. A biopsy specimen taken from the border of one of the circular lesions on the right instep will be described subsequently. The feet were soaked in cold 2 per cent solution of aluminum acetate twice daily, and the hyperhidrosis disappeared promptly. After a few days the lesions began to fade, though at the time of discharge, after ten days, they were still marked. The patient returned to the dispensary one, two and three months later, and although the sweating had not returned and the lesions had continued to improve, there was still a dull brownish red macular eruption with unchanged outline. Diascopic pressure caused complete blanching, and the discoloration returned slowly when pressure was released. At the time of the last visit a second biopsy specimen was taken from the region on the left instep corresponding to the site of the first specimen on the right; this will be described later.

CASE 3.—L. G., a 20 year old white student nurse, was seen in August 1937, when she had erythema multiforme, and four months later, when she had a recurrence of the same eruption accompanied with the syndrome under discussion.

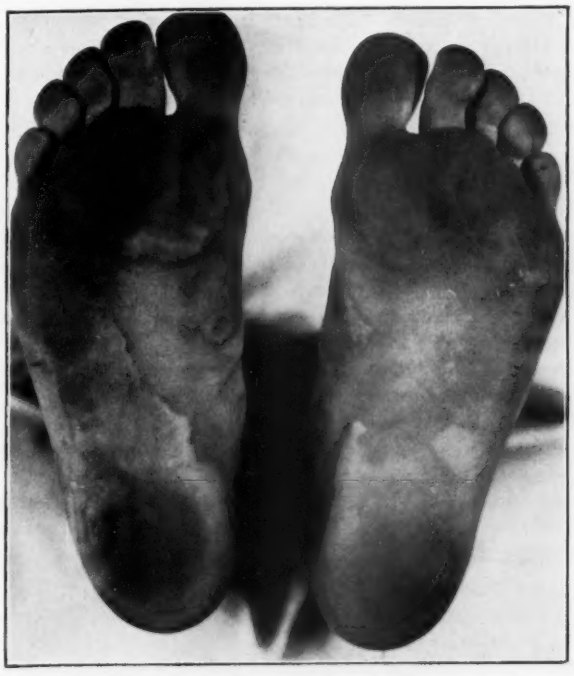

Fig. 2 (case 2).—Photograph showing extensive involvement of the soles. The symmetrically placed circular areas on the insteps may be seen here. Biopsy specimens were taken from these areas.

Fig. 3 (case 2).—Photograph showing the borders of the lesions.

Past History.—The patient had had pneumonia in infancy and the usual diseases of childhood without sequelae. She thought that she had had an erythema multiforme-like eruption almost every August during childhood. She had had catarrhal jaundice in 1937 and recurrent sinusitis for the past three years.

Present Illness.—The patient first came under observation in August 1937, when she complained of a pruritic eruption of six days' duration which had failed to respond to treatment with calamine lotion, mercurochrome or epinephrine. Examination showed a few isolated erythematous and somewhat urticarial papules surmounted by a mass of fine vesicles scattered over the trunk and extremities. Several of the lesions had been traumatized and were crusted. A general physical examination showed no essential abnormality. The eruption was typical of erythema multiforme vesiculosum. The patient was given a saline purge, and an ointment containing 12 per cent aluminum acetate was applied.

She did not return until Dec. 11, 1937 (four months later), at which time she reported that her previous eruption had cleared up in a few days and that she had had no trouble until about twelve hours before the present visit, when an eruption similar to the previous one had appeared. A detailed allergic history was noncontributory. She had repeatedly taken liquid petrolatum for chronic constipation. There had been no ingestion of ergot or of rye bread, nor had her feet been subjected to the use of new shoes or stockings or to unusual pressure.

Physical Examination.—There was no abnormality except a few variously sized and shaped erythematous maculopapules scattered over the legs and the buttocks. The skin about the ankles showed several small erythematous nodular lesions. The eruption was apparently still progressing. In the course of the general inspection of the skin it was found that the soles showed universal mild erythema with slight cutaneous edema. The irregular border of the erythema was visible along both the lateral and the medial border of the feet. This outline was symmetric, but its intensity was much less than in cases 1 and 2. The patient did not realize that the lesions were present, although she had noted marked hidrosis of the feet for the past twelve hours.

Course.—The patient was seen the next day, at which time the lesions on the body and extremities were covered with fine vesicles, as they had been during her previous attack. The lesions on the body were typical of erythema multiforme. Under intravenous administration of calcium thiosulfate, without any local therapy, both eruptions rapidly faded. The generalized eruption was gone in about a week and that on the soles a few days later.

CASE 4.—V. D., a native white girl aged 12 years, was first seen on Jan. 12, 1938, because of "itching around the heels" of about one month's duration.

Past History.—The patient had been seen in the pediatric dispensary in 1926 because of infantile eczema. This had disappeared shortly afterward. Her general health had always been good, except for recurrent tonsillitis and one attack of pneumonia in 1933.

Present Illness.—The patient first noticed a smooth erythematous lesion about 0.5 cm. in diameter, low on the lateral surface of the left heel. This itched intensely. The lesion spread peripherally so that in a few days the entire plantar surface of the left heel and the lower posterior surface of the ankle were involved. The eruption on the right foot followed a similar course a few days later. The patient thought that sweating of her feet had always been rather marked and was sure that since the onset of the eruption it had increased greatly. The only treatment had been alcohol rubs.

Physical Examination.—The girl was well developed but slender and intelligent. The tonsils were enlarged and cryptic, and several carious teeth were present. A complete neurologic examination showed no essential abnormality.

Dermatologic Examination.—The skin over the left internal malleolus showed a small area of depigmentation. There was mild acne of the face. The plantar surface of the heels was involved in a symmetric slightly edematous erythematous eruption, which extended anteriorly to the border of the heel, laterally and medially to the border of the plantar surface and posteriorly up about 2 cm., roughly in the shape of an inverted V, over the region of the achilles tendon. The eruption, though symmetric, was somewhat more marked on the right foot.

Course.—The patient's feet were painted with 40 per cent solution of formaldehyde. When she was seen one week later, the hyperhidrosis was greatly improved and the eruption noticeably less. Under this treatment at weekly intervals the eruption and hyperhidrosis continued to decrease, and the feet appeared essentially normal in about three weeks. She has not been seen since.

LABORATORY STUDY (ALL CASES)

The 4 patients showed normal hemoglobin readings and red cell, white cell and differential counts. The Wassermann and the Kahn reaction were negative in all instances. Routine urinalysis showed no abnormality except in case 2, in which there was glycosuria. Scrapings and cultures of material from the feet failed to show fungi in any case. Routine cutaneous tests (allergic) gave essentially negative results in cases 1 and 2. Examinations of stools were made in cases 1 and 2. In the former case results were negative, while in the latter Necator americanus was present. Intradermal tests with old tuberculin (0.1 mg.) gave negative results in cases 1, 2 and 3. Examinations of spinal fluid were made in cases 1 and 2. These showed normal pressure and sugar, protein, chloride and cell contents. The Wassermann reaction and the colloidal gold curve of the fluid were negative.

HISTOLOGIC STUDY

Case 1 (Hematoxylin and Eosin) (fig. 4).—The perpendicular plane of the specimen taken during the acute phase passed through the gross border of the lesion and included some clinically normal skin. In this surrounding "normal" tissue the changes to be described in the prickle cell layer and the corium were also present to a variable degree, increasing toward the border of the lesion, where the demarcation was sharply indicated by marked parakeratosis.

The corneous layer was of approximately normal thickness for the region but showed marked continuous parakeratosis. At no place was there a superficial covering of anuclear cells. The lower half of this layer was stained somewhat blue, and there was a mild degree of intracellular and intercellular edema.

The stratum granulosum was everywhere thickened and in some portions reached a depth of from fifteen to twenty cells. The granules

were prominent. The remainder of the cells of the prickle cell layer showed irregular acanthosis with broadening and downward extension of the interpapillary projections, apparently due chiefly to moderate edema, which was both intracellular and intercellular. The intercellular

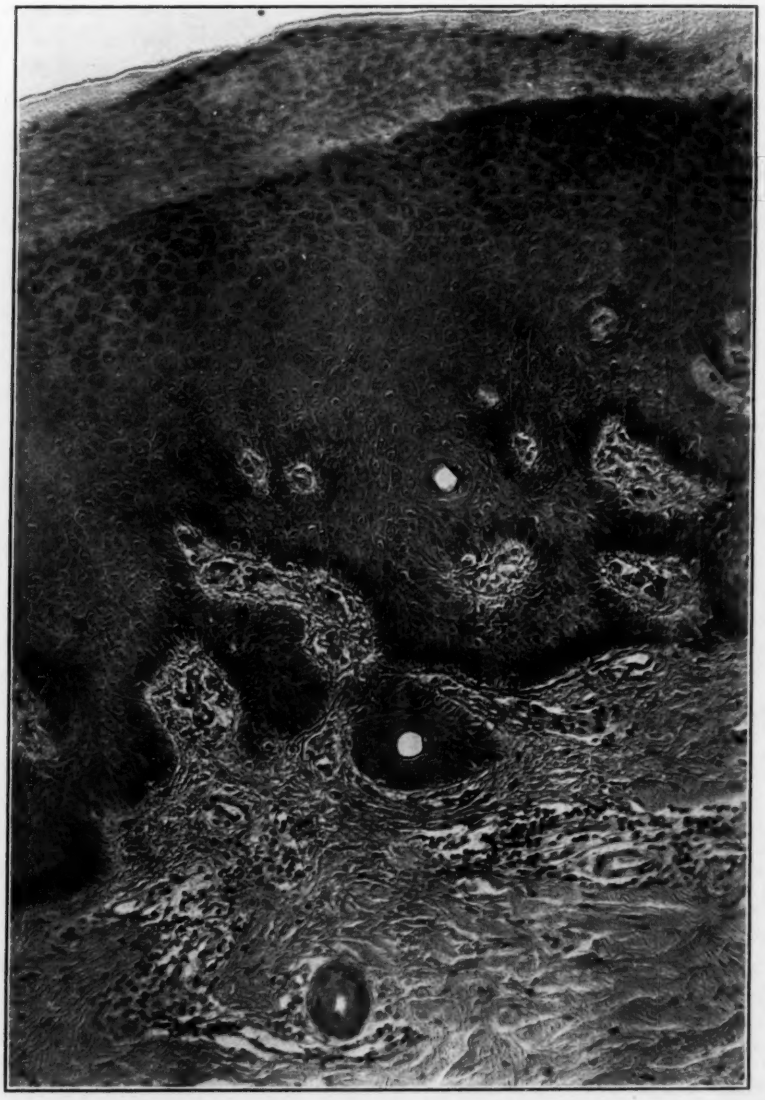

Fig. 4 (case 1).—Photomicrograph showing the periphery of the lesion. The normal corneous layer can be seen on the extreme right. Extreme parakeratosis, hypergranulosis, mild acanthosis, edema and perivascular infiltration are shown. Hematoxylin and eosin; × 200.

bridges were prominent, and the cells were swollen and poorly stained. In no place were these multinucleated, nor had they coalesced to form vesicles. No wandering cells were present in the epidermal layers, and the basement membrane, though irregular and indistinct in portions, seemed to be intact throughout.

The corium, particularly in its upper portion, was the seat of mild edema. The papillae showed this most markedly. Here the collagenous fibers were widely separated, swollen, fragmented and poorly stained. The upper portions of the corium showed a mild cellular infiltration. Again, this was most marked in the papillae but was noticeable in the perivascular regions of the upper part of the corium. The cells were chiefly lymphocytes, but a few young connective tissue cells and an occasional polymorphonuclear leukocyte were also present. No plasma cells were found. The blood vessels throughout the corium, particularly in the upper portion, were distended, and some were engorged with red blood cells. There was no evidence of endothelial proliferation. The sweat glands and their ducts were apparently normal except for moderate surrounding edema. No pilosebaceous elements were seen.

A Van Gieson stain showed essentially the same changes as those seen with hematoxylin and eosin.

Case 2 (Hematoxylin and Eosin).—A specimen taken during the acute phase from the border of the lesion on the right instep showed changes practically identical with those described in case 1, except that here, although parakeratosis was marked, nuclei were absent in several areas in the uppermost layers. The process of keratinization was incomplete throughout, and the cells of this layer were swollen and often vacuolated. The granular layer was definitely increased only at intervals and nowhere was as marked as in case 1. The corium showed essentially the same changes as in case 1, except that the edema was somewhat more marked and the perivascular infiltration more striking. The vessels throughout showed mild thickening, though there was no frank endothelial proliferation or swelling.

Case 2 (Hematoxylin and Eosin) (Second Biopsy).—A second specimen, taken three months later from a location on the left foot corresponding to that on the right previously studied, showed the same hyperkeratosis and swollen corneous cells, but the parakeratosis had largely disappeared. The acanthosis was still present, but the epithelial edema was somewhat decreased and the interpapillary projections more broadened. The granular layer was still increased but more continuous. The edema of the corium was considerably decreased, while cellular infiltration was practically absent. There were perhaps a few more fibroblasts. The vessels were much less evident, and there were no blood-filled gaping ones. The perivascular infiltration was decreased.

DIFFERENTIAL DIAGNOSIS

The symmetric distribution on the extremities and the somewhat livid hue suggest Raynaud's disease, but the differentiation apparently can be established clinically. There is no preliminary local syncope, acute paroxysm, hypersensitivity to cold or subsequent gangrenous change. Although some of the patients mentioned here had several attacks, the disease apparently is not characterized by innumerable recurrences and progression as is Raynaud's syndrome.

Erythredema can be distinguished by its occurrence in children, the marked constitutional symptoms, the exfoliation of the erythematous skin and the presence of a generalized eruption.

Erythromelalgia is characterized by a neuralgic type of pain and the amelioration of symptoms when the affected part is elevated.

The restriction of this disease to the feet, together with the absence of seasonal variation and marked palpable infiltration, prevents confusion with lupus pernio. To these factors may be added the absence of any tuberculoid picture in the histologic section.

Ergotism should be ruled out by the absence of a suggestive history and of severe vascular changes leading to gangrene.

The resemblance of the individual lesions to those seen in some maculopapular varieties of erythema multiforme is inescapable. Symmetric distribution does not necessarily rule it out, although in the dermatosis under discussion the symmetry is so striking that it dominates the picture. This surely cannot be said of erythema multiforme in the usual case. The absence of eruption except on the soles in every case but one tends to place this disease in a special category. It is evident that no pathologic picture can be defined from the histologic study of three specimens in 2 cases. However, in these sections, except for parakeratosis, the findings were not unlike those often seen in erythema multiforme. This parakeratosis is not entirely inconsistent and can probably be explained on the basis of the underlying inflammatory irritation.

COMMENT

The scant mention of this dermatologic condition in the literature and in standard textbooks (Sutton and Sutton [4]) would lead one to believe that it is rare. However, in the past two years 6 cases which undoubtedly fall into this classification have been observed in this dispensary. Unfortunately, the data in 2 of these cases were not complete enough to warrant their inclusion in this paper. Parkhurst has suggested that if the condition is related to hyperhidrosis it is probably common. In only 4 of the 8 cases so far studied were subjective symptoms present. This,

4. Sutton, R. L., and Sutton, R. L., Jr.: Diseases of the Skin, ed. 9, St. Louis, C. V. Mosby Company, 1935, p. 412.

plus the somewhat hidden location, perhaps explains the apparent rarity of the disease.

In an effort to define the clinical picture, one finds that the following features have been reasonably constant: 1. It occurs chiefly in young persons (in the second and third decade). 2. The subject is usually otherwise healthy. 3. The lesions are strikingly symmetric. 4. The eruption is limited to the soles and adjacent portions of the feet. 5. Hyperhidrosis and bromidrosis are present. 6. The lesions are typically somewhat cyanotic and soggy in their central portions and limited by well defined, slightly erythematous borders. 7. The onset is acute, and most attacks seem to be self limited, but recurrences are noted. 8. The dermatosis responds well to astringent applications. Despite the small number of cases available for study, it is believed that these characteristics define the condition well enough to justify its position as a dermatologic entity.

The salient pathologic changes shown microscopically are: (1) marked parakeratosis and hypergranulosis; (2) generalized edema and vascular dilatation, and (3) moderate subacute and chronic cellular infiltration, often concentrated perivascularly. All these findings tend to classify the condition with the exudative dermatoses (fig. 4).

The type of patient, the clinical picture of the individual lesion and the histologic observations immediately suggest erythema multiforme, while the bilateral symmetry suggests a neurologic relationship.

However, both in the cases of Pernet and Parkhurst and in the ones presented here, the distribution of the lesions has not coincided with either the radicular or the peripheral nerve supply of the sole. The lack of association with the nervous system is further supported by the finding of normal spinal fluid in 2 cases and of an essentially normal neurologic condition in 3. It is true that in case 2 there was some mild sensory upset over the affected areas, but at the time of examination it was thought that this might be due to the cutaneous edema and the patient's mental sluggishness.

It appears, therefore, that the condition is not related to the nervous system but probably has some toxic source and should be classified with the erythema multiforme group. In case 3 the occurrence of this dermatosis in conjunction with a typical attack of generalized papulovesicular erythema multiforme is, it is felt, strong support for this hypothesis.

Hyperhidrosis as a causative factor cannot be ruled out. However, the frequency of this dysfunction compared with the rarity of the condition under discussion makes such a relation seem unlikely. Hyperhidrosis was marked in all the cases presented. Perhaps a satisfactory explanation would be that the excessive sweating is merely incident to the local edema and hyperemia.

The name "symmetrical lividities of the soles of the feet" was given to this condition by Pernet. In the absence of previous description, he used this term to pigeonhole the condition for future reference. The name, therefore, was more a mnemonic than an actual definitive term. Although in most cases there has been a slight bluish tinge, it seems that the word "lividity" is not applicable. The condition obviously is not primarily a passive congestion due to dependency, such as this word in medical terminology usually connotes.

Because the cases studied so far suggest that the condition is a subdivision of the great group of exudative dermatoses and that the lesion itself is due to active hyperemia, cutaneous edema and cellular infiltration, the name "symmetric *erythema* of the soles" is proposed. It is felt that this term embraces both the clinical findings and the fundamental nature of the disturbance demonstrated histologically.

SUMMARY

Four cases previously reported under the title "Symmetrical Lividities of the Soles of the Feet" are reviewed.

Four additional cases with histologic studies are recorded.

Factors in differential diagnosis are summarized.

An attempt is made to crystallize the clinical and the pathologic observations and to relate them to those in the general class of exudative dermatoses.

The name "symmetric *erythema* of the soles" is suggested for this condition.

HEREDITARY ECTODERMAL DYSPLASIA OF THE ANHIDROTIC TYPE

(CONGENITAL ECTODERMAL DEFECT)

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AND
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Cases of hereditary ectodermal dysplasia of the anhidrotic type are still sufficiently rare to warrant publication, and when 2 classic cases in one family are discovered, we feel justified in bringing the subject before dermatologists once more.

The question of the designation of this disease—congenital ectodermal defect or hereditary ectodermal dysplasia of the anhidrotic type—is of interest and has not been fully settled. As the title of our paper signifies, we prefer the latter term as being more descriptive of the condition under discussion. Congenital ectodermal defect may apply to a great variety of congenital anomalies of the ectoderm, from minor aberrations in dentition, abnormalities of the nails or hirsute adornment to a major defect presenting all these difficulties, combined with absence of sweat glands and marked decrease in sebaceous gland formation as well. The term congenital ectodermal defect has led to considerable confusion in the literature—so much that a number of cases have been reported and accepted as instances of this anomaly which in our opinion did not seem to measure up to the standards required. Even Weech,[1] who proposed the title hereditary ectodermal dysplasia at the time he presented 2 cases as the tenth and eleventh cases (actually his authentic case was about the twenty-second), included the case of a patient who he admitted perspired, and as he did not make a biopsy in either of his cases we have been forced to consider his second one as not being an instance of true ectodermal dysplasia and to delete it from our list of authentic cases reported.

The term hereditary ectodermal dysplasia defines the disease and embodies the salient features of the syndrome, its hereditary or familial characteristics, the dysplasias of the ectoderm and the complete absence of sweat glands.

The literature has been reviewed so often by previous reporters that it would seem redundant to make a detailed review at this time. For

1. Weech, A. A.: Hereditary Ectodermal Dysplasia (Congenital Ectodermal Defect): Report of Two Cases, Am. J. Dis. Child. **37**:766 (April) 1929.

the information of those who wish to check the literature we have drawn up a table listing chronologically all cases which we considered undoubted instances of the disease and including the nationality of the author with the reference.

There are, however, a few points which seem to have escaped many reporters; hence, we take the liberty of reviewing them here.

Cases Reported in the Literature

Author	Nationality	Comment
Thurman: Proc. Roy. M. & Chir. Soc. **31**: 71, 1848....	English	Reported 2 cases
Williams, in discussion on Thurman: Proc. Roy. M. & Chir Soc. **31**: 71, 1848; London M. Gaz. **41**: 336, 1848..	English	
Guilford: Dental Cosmos **25**: 113, 1883.....	American	
Ascher: Ztschr. f. Ethnol. **30**: 114, 1898.....	German	Reported 2 cases
Teudlau: Virchows Arch. f. path. Anat. **167**: 465, 1902	German	
Christ: Arch. f. Dermat. u. Syph. **116**: 685, 1913.....	German	
Gibbs: Dent. Rec. **35**: 669, 1915.....	English	Reported 2 cases
Blaisdell and Cunningham: Boston M. & S. J. **176**: 210, 1917	American	
Strandberg: Nord. med. Ark. **51**: 1, 1918.....	Norwegian	
Goeckerman: Arch. Dermat. & Syph. **1**: 396, 1920.....	American	
Cockayne: Proc. Roy. Soc. Med. **14**: 17, 1920.....	English	
Siemans: Arch. f. Dermat. u. Syph. **136**: 69, 1921.....	German	
Thadani: J. Hered. **12**: 87, 1921.....	Indian	Reported a community in which many inhabitants suffered from the syndrome
Siebert: Ztschr. f. klin. Med. **94**: 317, 1922.....	German	
MacKee and Andrews: Arch. Dermat. & Syph. **10**: 673, 1924	American	
Czerny: Vrtijschr. f. Zahnh. **40**: 124, 1924.....	German	
Harris: Proc. Roy. Soc. Med. **21**: 227, 1927.....	English	Reported case as one of progeria
Lutz: Cong. suisse de Soc. dermat., 1928, vol. 12.....	Swiss	
Weech: Am. J. Dis. Child. **37**: 766, 1929.....	American	
Roberts: J. A. M. A. **93**: 277, 1929.....	American	
Falconer: Lancet **2**: 656, 1929.....	English	
Smith: Arch. Dis. Childhood **4**: 215, 1929.....	English	
Kerley: Arch. Pediat. **47**: 639, 1930.....	American	
Gordon and Jamieson: Ann. Int. Med. **5**: 358, 1931..	American	
Rjabow and Janitzkaja: Russk. klin. **8**: 173, 1931.....	Russian	
Fleischman: Zentralbl. f. Haut- u. Geschlechtskr. **39**: 181, 1932	German	
Bowen: South. M. J. **25**: 481, 1932.....	American	
Zeligs: Am. J. Dis. Child. **44**: 394, 1932.....	American	
Rademaker: Acta pædiat. **15**: 57, 1933.....	Netherlandish	
Hill: Arch. Dermat. & Syph. **28**: 66, 1933.....	American	
Clarke and McCance: Arch. Dis. Childhood **9**: 39, 1934	American	
Hiebert and Garland: New England J. Med. **210**: 784, 1934	American	
Schwarz: South. M. J. **28**: 606, 1935.....	American	Reported 2 cases
Dods: M. J. Australia **1**: 715, 1935.....	Australian	
Thannhauser: J. A. M. A. **106**: 908, 1936.....	American	
Stevenson: Pennsylvania M. J. **39**: 976, 1936.....	American	
Touraine: Presse méd. **44**: 145, 1936.....	French	
Capper and Bekir: Arch. Pediat. **54**: 160, 1937.....	American	

Thurman [2] in his original report went into extreme detail concerning his first case, including a report on the microscopic examination of the skin, and completely established the case as one of true hereditary ectodermal dysplasia. He reported in less detail, but nevertheless sufficiently fully, a similar anomaly in a first cousin of his first patient. For some unexplained reason, most subsequent authors have credited him with only 1 case and numbered theirs accordingly.

2. Thurman, J.: Proc. Roy. M. & Chir. Soc. **31**:71, 1848.

Williams [3] presented a case in discussing Thurman's; this was appended as a postscript to Thurman's original article. The case was reported more fully later and is another undoubted case which in most instances has not been included.

Two proved cases in one family have been satisfactorily presented by Thurman,[2] Ascher,[4] Gibbs [5] and Schwarz.[6] Several other authors have claimed 2 or more cases in one family but have presented insufficient data in their articles to allow acceptance of the claim. Thus, Thadani [7] reported on a community in India in which a considerable proportion of the population suffered from the disease, and Roberts [8] discussed the genetic relationship of a family who came under his attention. Both authors discussed the condition from the genetic rather than the dermatologic angle, and although their description of the affected persons is meager, there seems to be little doubt that they dealt with true anhidrotic dysplasia.

REPORT OF CASES

CASE 1.—L. B., a white boy aged 6 years, was admitted to the South Baltimore General Hospital on Oct. 25, 1937, for observation and study. His mother had died of pulmonary tuberculosis during his infancy; his father was living and well. The patient had one sister, who was found to be normal in every respect. A maternal uncle, 31 years of age presented features typical of this defective condition. His case will be reported as case 2.

The patient's past health had been excellent. Up to the time of examination he had had only measles, which had been accompanied with excessive fever but from which the convalescence had been entirely uneventful. He had been a seemingly bright child, mentally alert and responsive, and had been able to sit up at 6 months, walk at 10 months and talk at 12 months.

When he was first brought to us, he had troublesome chronic eczema about the mouth and in the cubital fossae. When we questioned the father we were told that the child had never perspired and consequently could not tolerate hot weather and found it impossible to remain in the sun during the summer. On extremely hot days he was forced to lie in a tub of cool water to be reasonably comfortable. There were moderate polydipsia and polyuria, most marked during warm weather. The teeth had not erupted properly, but that did not concern either the family or the patient, since he was able to chew most foods without difficulty.

Examination revealed a well proportioned boy, seemingly in good health, mentally alert and cooperative. He was found to be below the minimum normal in height, in measurement of the upper portion of the body, in size of the head and in circumference of the chest. The skin of the body was smooth and of

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3. Williams, C. J. B., in discussion on Thurman [2]; London M. Gaz. **41**:336, 1848.

4. Ascher, B.: Ztschr. f. Ethnol. **30**:114, 1898.

5. Gibbs, J. H.: Dent. Rec. **35**:669, 1915.

6. Schwarz, E. G.: South. M. J. **28**:606, 1935.

7. Thadani, K. I.: J. Hered. **12**:87, 1921.

8. Roberts, E.: Inheritance of Anhidrosis Associated with Anadontia, J. A. M. A. **93**:277 (July 27) 1929.

fine texture, and the superficial veins could be seen clearly. In the cubital fossae and extending from the corners of the mouth were moist, crusted, ill defined eczematous areas. The entire body was dry, with no evidence of perspiration. The hair of the scalp was fine, scant and blond, so that the scalp could be easily seen through the light growth. The eyebrows and eyelashes were likewise scanty. Lanugo was present on the bearded region of the face, but no lanugo was to be seen on close inspection of the body and extremities.

The head was normal in contour, except for rather prominent frontal bosses. The nose was small but saddle shaped, and the nostrils were large. A moderate degree of nasal catarrh was present, and the mucous membrane of the nasal cavity appeared inflamed and atrophic. The septum was intact. The eyes were normal in all respects, and lacrimation was adequate. Extending out from the eyes and the corners of the mouth were numerous fine wrinkles, where the skin was darker than on the remainder of the face. Six teeth were present, four in the upper and two in the lower jaw. All were peg or cone shaped but of good consistency and in a good state of repair. The gums, the tongue and the posterior wall of the pharynx appeared normal. The lips were thick, muscular and protruding. They were of rather poor color and showed an ill defined vermilion border.

The heart and lungs were normal. The blood pressure was 85 systolic and 60 diastolic. The body and extremities were well proportioned and the musculature good. No bony anomalies could be observed clinically. The finger and the toe nails were normal. The skin of the palms and soles was possibly slightly thicker than normal, but there were no callosities.

A mild tendency toward a potbelly was present, but there was no hernia of the umbilical type. The genitals were somewhat hyperplastic, and both testicles had descended. There was no abnormal glandular enlargement.

Laboratory Findings.—The urine was normal at all times. A blood count showed 70 per cent hemoglobin, 3,800,000 erythrocytes and 5,600 leukocytes, with a normal differential count. The basal metabolic rate was + 5 per cent. The Wassermann test of the blood was negative. Chemical analysis of the blood showed 48 mg. of nonprotein nitrogen and 102 mg. of sugar per hundred cubic centimeters. The feces showed no blood, ova or parasites. Roentgen examination of the wrists showed the epiphysis of the radius to be smaller than normal; that of the jaws showed deficiency of dentition, with several unerupted teeth, all cone shaped; that of the skull showed no bony abnormalities, and the sella turcica was of the normal open variety.

Course in the Hospital.—The eczematous areas about the mouth and cubital fossae responded quickly to mild local treatment. While the patient was in the hospital an elevation of body temperature was noticed each afternoon at the time of day when the temperature of the wards was at its highest level. The rectal temperature of the patient on these occasions would rise as high as 100.8 F., and would subside to normal limits when the temperature of the ward fell at night.

Two tests were done during the patient's stay in the hospital to demonstrate the absence of sweat glands and its effect on the body. In the first test 200 cc. of milk warmed to 110 F. was given the patient. The rectal temperature rose from a resting level of 99.4 to 100.4 F. in five minutes. Five minutes later the temperature had reached 100.8 F., at which level it was maintained for one and a half hours. During this time the patient did not perspire but complained of feeling warm. A normal child of the same age as the patient was used as a control. He was tested under similar conditions, and though he perspired he showed no rise in body temperature.

Fig. 1 (case 1).—The scantiness of scalp hair and the almost complete absence of eyebrows and eyelashes can be seen. The fine wrinkles and pigmentation about the eyes are characteristic.

Fig. 2 (case 1).—View of mouth, showing cone-shaped incisors.

In the second test 5 minims (0.31 cc.) of a 1 per cent solution of pilocarpine was administered hypodermically. After the injection no perspiration was seen or felt, but the patient seemed uncomfortable and there was a temporary frequency of urination. A control subject given the same test perspired profusely.

Two biopsies were performed, one on a section of skin taken from the left forearm and the other on a section from the left axilla. Careful examination of serial sections failed to show the presence of sweat glands, sebaceous glands or hair follicles. Aside from the absence of these appendages, the sections were normal.

A psychometric examination disclosed the fact that while the patient's chronologic age was 6 years and 4 months, his mental age was 5 years and 8 months, making the intelligence quotient 90.

CASE 2.—J. S., a white man aged 32, a maternal uncle of L. B., was seen and examined by us on several occasions. Though fairly cooperative, he refused hospitalization, so that we were unable to perform the heat experiments carried out in case 1. A psychometric examination was not done, but it was easily noted that his mentality was below normal. His voice was hoarse and his speech impaired. At times he was apt to become rather despondent because of his appearance. He had never been married, but his libido was normal.

He had had no serious illnesses or operations. His general health had been good. He had always been employed as a laborer but complained of being unable to work during the summer since heat produced extreme discomfort and weakness. He had never perspired and as a result could achieve comfort in midsummer only by keeping his body or underclothes constantly moistened. During the winter he was able to work in comfort.

Physical examination showed him to be 5 feet 3 inches (160 cm.) tall, to weigh 130 pounds (59 Kg.) and to be in apparent good health. The skin of the entire body was soft, smooth and of good color, but everywhere dry. The distribution of hair was unusual, in that the scalp hair was thin, short, silky and scanty, allowing the scalp to be seen clearly in all areas. The beard was normal for a man. A few silky hairs were seen on the upper part of the chest as well as in the axillas and the pubic region. There was no evidence of hair of even lanugo type on any other portion of the body.

The muscular system was well developed, and there was no gross skeletal disproportion. The glandular system was normal on palpation.

The scalp was of normal contour and presented no abnormality aside from the paucity of hair. The most striking feature of the face was the saddle nose, which was more marked than that of our first patient. The nasal mucosa was somewhat injected but otherwise normal, and the septum was intact. The eyes were normal except for an opacity of the left cornea produced by an old injury. The eyebrows and eyelashes were scanty. The lips, as in the first case, were dry, muscular and protruding. Extending from the eyes and the corners of the mouth were fine radiating wrinkles, associated with hyperpigmentation of that portion of the skin. The beard, as in most men with the disease, was normal in distribution and character.

Examination of the mouth showed only two upper and two lower teeth, all of which bore resemblance to a truncated cone. This was due perhaps to grinding down of peg-shaped teeth originally present. The patient had never worn a denture and experienced no difficulty in chewing foods. The remainder of the mouth was normal.

Fig. 3 (case 2).—The patient manifests the same characteristics as his nephew (fig. 1).

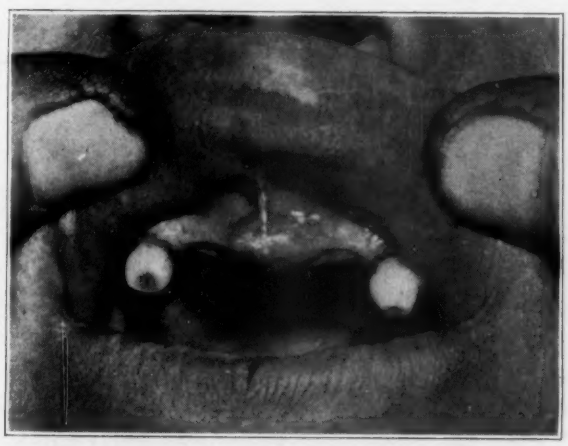

Fig. 4 (case 2).—View of mouth of adult, showing worn-down cone-shaped teeth.

The chest was of normal contour, with expansion free and equal on both sides. The heart and lungs were normal. The blood pressure was 125 systolic and 85 diastolic. The abdomen and genitals were normal, and no abnormility in the reflexes was noted.

The Wassermann reaction was negative. Biopsy of the skin of the left forearm showed complete absence of sweat glands, sebaceous glands and hair follicles.

Fig. 5.—Roentgenogram of skull, showing unerupted teeth with characteristic cone shape.

DIFFERENTIAL DIAGNOSIS

1. *Congenital Syphilis.*—It is with this condition that hereditary ectodermal dysplasia is most easily confused. However, in none of the cases of ectodermal dysplasia hitherto reported has there been a positive Wassermann reaction or a history of syphilis in the family. The only common feature of both conditions is the saddle nose. The peg-shaped teeth associated with the defect are easily distinguished from the Hutchinson teeth and mulberry molars of congenital syphilis. The fine radiating wrinkles about the mouths of patients with the dysplasia are

due to absence of tissue and are to be distinguished from the true rhagades of congenital syphilis, which are due to linear ulceration and scar tissue. In the latter condition interstitial keratitis and osteoperiostitis, especially of the tibias, are often present. As a final differential point, there is no favorable response of hereditary ectodermal dysplasia to antisyphilitic therapy.

2. *Progeria.*—One case of true hereditary ectodermal dysplasia was reported as an example of progeria by Harris [9] in 1927. In this condition, first described by Gilford [10] in 1904, one finds abnormally premature senility with onset of the degenerative visceral diseases during the first and second decade. Death generally ensues about the twentieth year.

3. *Endocrinopathy.*—Hypothyroidism or hypopituitarism may be ruled out easily by routine examination.

SUMMARY

Two cases of hereditary ectodermal dysplasia of the anhidrotic type occurring in the same family are presented.

We prefer the name hereditary ectodermal dysplasia to congenital ectodermal defect, since the former is more descriptive of the outstanding characteristics of the syndrome.

The true cases of this condition reported in the literature to date are tabulated.

Clinical experiments indicating the effect of absence of the sweat apparatus on the heat-regulatory mechanism are described.

The differential diagnosis of the condition is discussed.

11 East Chase Street.

9. Harris, C. F.: Proc. Roy. Soc. Med. **21**:227, 1927.
10. Gilford, H.: Practitioner **73**:188, 1904.

LARGE EPITHELIOMA OF THE CHEEK

REPORT OF A CASE

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Malignant epithelioma of the face is not rare, but large tumors are not frequently reported in the literature. The case to be described is of interest not only because of the size of the neoplasm but because of the rapid growth and microscopic appearance of the tumor.

REPORT OF CASE

The patient was a white married woman 64 years of age. She immigrated to the United States from Austria, where she was born, ten years prior to her commitment to the Eastern State Hospital. The hospitalization was necessitated by a condition diagnosed as manic-depressive psychosis with subsequent deterioration. Early in 1935 a small tumor appeared over the left temporal region. This mass gradually increased in size and was removed by electrocautery on Nov. 13, 1935. The region from which the tumor was removed is recognized by the wide scar shown in figure 1 (arrow). The tumor, which measured about 2 cm. in diameter, was ulcerated, spongy and friable. The microscopic appearance was that of typical malignant squamous epithelioma. There was no recurrence of the neoplasm in its original site. However, in March 1936 a small red mass appeared on the left cheek below the ear and rapidly increased in size. After several months the tumor began to break down, causing frequent hemorrhages, aggravated by the patient's manipulations. Because of intense pain the patient was kept under the influence of morphine until her death, on Sept. 29, 1937. A complete autopsy was performed, which revealed moderate obesity, cerebral atrophy, cardiac hypertrophy with dilatation of the right auricle and ventricle, pulmonary edema and bronchopneumonia, chronic congestion of the liver and spleen and moderate generalized arteriosclerosis. A large cauliflower-shaped foul-smelling dark red discolored almost circular mass, 12 cm. in greatest diameter and 3.5 cm. deep, was present over the left side of the face, extending from in front of the upper tip of the ear, only the upper half of which was intact. The lower border of the tumor was at the level of the mandibular angle and extended behind the left mastoid process. The anterior border of the tumor was at the zygoma. The neoplasm was moderately firm and friable. The anterior surface exhibited crusting and several craters, which were filled with reddish gray purulent matter. The circumference of the mass was covered by skin, which in parts was ulcerated. The tumor invaded the left parotid gland but did not invade the underlying cranial bone.

Microscopic Picture.—Since the histologic structure of the superficial regions of the tumor differed from that of the deeper areas, the two will be described separately:

From the Pathological Laboratory of the Eastern State Hospital.

Fig. 1.—Epithelioma of the cheek. The arrow points to the scar at the site of the original tumor.

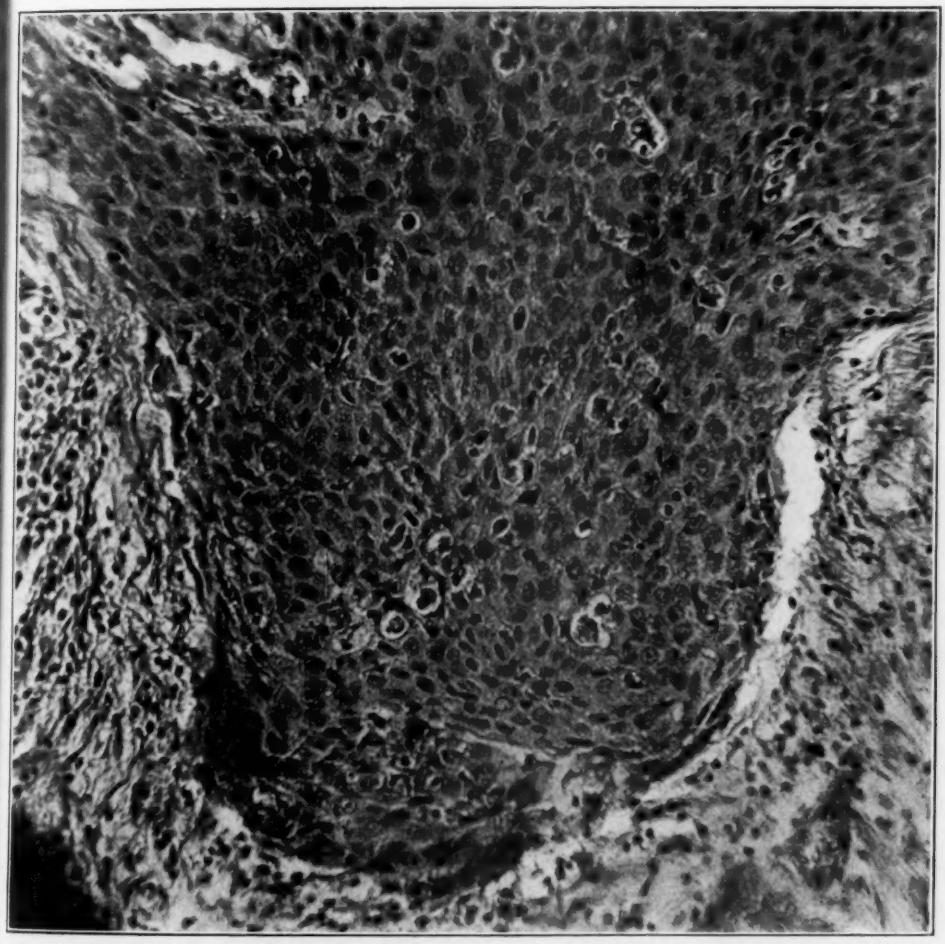

Fig. 2.—Superficial region of the epithelioma, showing basal cell character.

Superficial Regions of the Tumor: The microscopic appearance of these regions was that of basal cell carcinoma (fig. 2). There were large islands of compact dark-staining cells which resembled the cells in the basal layer of the skin. The scant cytoplasm stained blue with the hematoxylin-eosin stain. The cells in the periphery of the islands were well preserved, whereas the cells in the center were elongated and the nuclei were a homogeneous dark blue, indicative of degeneration, probably due to pressure. Mitoses were numerous. The islands or masses of cells were separated from each other by strands of connective tissue, in which were seen lymphocytes and plasma cells.

Deeper Regions of the Tumor: The histologic structure of these parts was typical of squamous carcinoma (fig. 3). Small islands or masses of epithelial

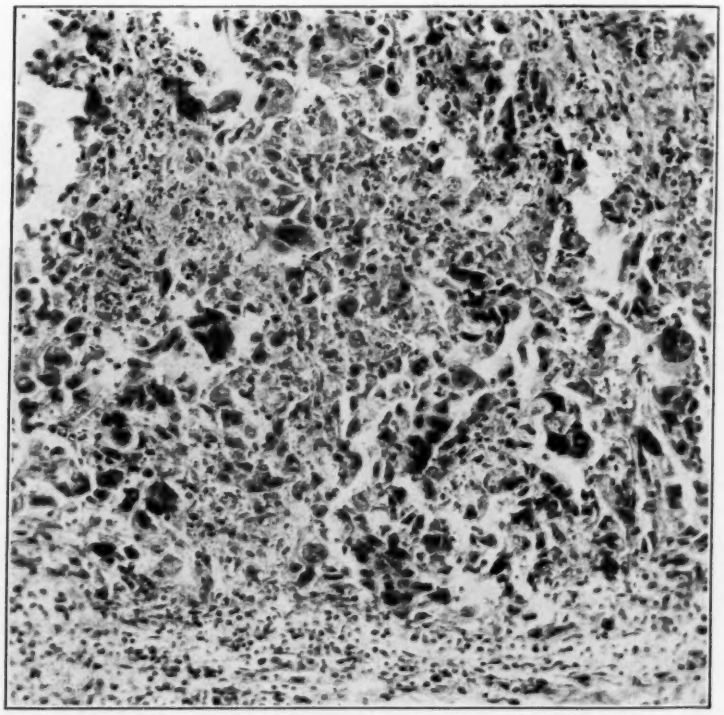

Fig. 3.—Deeper region of the epithelioma, showing squamous cells.

cells of various sizes and shapes showed no definite arrangement. The cytoplasm was well stained with eosin. Mitotic figures were less numerous than in the superficial portions of the neoplasm. However, large cells with two or three nuclei were numerous. Many epithelial cells had a mummified appearance denoting degeneration, but no pearl formations could be seen. The stroma consisted of connective tissue, in which lay lymphocytes and plasma cells. There were areas of necrosis and small regions of hyalinized connective tissue.

COMMENT

The epithelioma just described presents several interesting features: It attained its large size in one and one-half years and appeared in a

site somewhat remote from that of an epithelioma which had been removed about four months earlier. Another important characteristic is the difference in histologic structure between the superficial and the deeper regions of the neoplasm, the former being a basal cell and the latter a squamous cell type of epithelioma. Furthermore, mitoses were far more numerous in the basal cell regions than in the squamous cell portions. It is interesting to note that the outward growth of the tumor was far more extensive than the inward penetration, the parotid gland being only slightly invaded by the tumor cells and the underlying bones entirely free of cancer cells.

COSMETIC IRRITANTS

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Although the use of cosmetics is as old as recorded history,[1] it has become recognized as a dermatologic problem only during the past few decades. In proportion to the enormous quantity of cosmetics consumed by all classes of women, and to some extent also by men, cutaneous diseases arising from this cause are not alarmingly frequent. On the other hand, the dermatologist is increasingly confronted by dermatoses among industrial workers from contact with irritants employed in the manufacture of toilet articles, as well as among those who use the finished product, such as employees of beauty parlors, barbers and sales clerks.

The cosmetic trade is a highly remunerative one, and since the vanity of women, played on by page after page of lyric advertising, leads them constantly to enhance their beauty or conceal their defects by artificial aids, there is no indication that it will cease to flourish. My purpose is simply to describe the hazards incident to the manufacture and sale of cosmetics which may lead to disfigurement, disability, loss of employment or even death.

The workmen's compensation laws vary in the different states, and medical participation in their enactment and enforcement has not been provided for. It is my belief that state and federal health services are the proper organizations to control these hazards, and uniform laws should be passed prohibiting the use of any ingredient that may be injurious to the health of workers or consumers. Cases of dermatitis should be under the supervision of dermatologists, since the conditions

1. W. A. Poucher (Perfumes, Cosmetics and Soaps, with Especial Reference to Synthetics, ed. 5, London, Chapman & Hall, Ltd., 1936, vol. 2) pointed out that the ancient Asiatic nations had a great predilection for cosmetics, by no means confined to the fair sex. Herodotus said that the Babylonians were great consumers of aromatics and perfumed their bodies with the most expensive odors. Red and white paint, composed respectively of vermilion and white lead, were common. The ancient Egyptian ladies painted their eyebrows, eyelids and eyelashes black with kohl, a material composed chiefly of galena. The Second Book of Kings (9:30), written in approximately 896 B. C., mentions the use of cosmetics as follows: ". . . when Jehu was come to Jezreel, Jezebel heard of it; and she painted her face, and tired her head, and looked out at a window."

are often obscure and specialized knowledge is required to evaluate their cause and prevention.[1a]

With the constantly increasing use of drugs and chemicals in industry throughout the world, there is a corresponding increase in the incidence of occupational dermatitis, which was shown in 1936 to comprise one third of all compensable diseases. One clinic[2] reported that in 1930 75 per cent of all types of dermatitis on the face and neck among its patients were of cosmetic origin.

It is generally claimed that only those persons having an idiosyncrasy are subject to injury by cutaneous irritants. It is of course true that certain persons may react to a substance that will have no effect on others. Nevertheless, eczema can be produced in any person by the first application of certain chemicals, such as perchloride of mercury, regardless of whether there is an idiosyncrasy. It appears to be a universal reaction of the skin to agents too powerful for it to withstand. There is no person who is immune to all cutaneous irritants. Sensitization can be acquired through the first contact with a strongly irritating substance or through prolonged contact with a milder one. On the other hand, immunity may be acquired by certain persons through long-continued exposures.

Cosmetic dermatitis usually appears abruptly and clears up within a reasonable time after contact with the irritant stops. Its appearance, however, gives no clue to the specific causative agent, which must be determined by patch tests with suspected substances. The disease is characterized by erythema, edema, papules, vesicles, exudation, crusts and finally desquamation. It tends to form patches with indefinite borders and is usually accompanied with pruritus. When the condition is chronic the skin becomes thickened, infiltrated, pigmented and fissured. Clinically and microscopically the condition is indistinguishable from eczema, and no distinction will be attempted here.

The various types of irritants that may produce industrial dermatitis venenata are: (1) chemical and caustic agents, such as chromates, arsenous acids and dyes; (2) solvents that dry the skin by removing the natural grease—for example, turpentine, petroleum, benzene and benzine derivatives such as the nitro and amino compounds—and (3) substances which soften and macerate the skin, e. g., alkalis. Perfumes, hair dyes, face powders and lotions and, in fact, practically all toilet articles containing such general irritants as alkalis, even though in small quantities, have at some time given rise to dermatitis venenata.

1a. Since this article was written a federal food, drug and cosmetic act, which will attempt to place some control on the industry, has been approved and will become effective in June 1939. It remains to be seen, after it has been in operation for a period, how far this act will correct existing abuses.

2. Lain, E. S.: Cosmetic Eruptions, South. M. J. **25**:718 (July) 1932.

PERFUME DERMATITIS

Perfumes, colognes and toilet waters may produce typical dermatitis venenata by contact with the skin of persons who are hypersensitive to the essential oils or the alcoholic vehicles. Hypersensitivity has been acquired after contact for periods of from one to six months.

The natural essential oils used in perfumes are obtained from the following sources[3]: the flowers of cassia, carnation, clove, hyacinth, heliotrope, Mimosa, jasmine, jonquil, orange blossom, rose, Reseda, violet and ihlang-ihlang; the flowers and leaves of lavender, rosemary, peppermint and violet; the leaves and stems of geranium, patchouli, petitgrain, verbena and cinnamon; the bark of canella, cinnamon and cassia; the wood of cedar, linaloa and sandal; the roots of angelica, sassafras and vetiver; the fruits of bergamot, lemon, lime and orange; the seeds of bitter almond, anise, fennel and nutmeg, and the rhizomes of ginger, orris and calamus.

The constituents of volatile oils are generally accepted to be: alcohol, esters, hydrocarbons, terpene alcohols, acids, aldehydes, ketones and phenols.

Artificial essential oils usually contain some proportion of the natural oil together with other ingredients.

Experimentation and clinical experience have shown that the essential oil of bergamot is the chief agent in the production of perfume dermatitis.

In berlock dermatitis[4] the oil is only partly responsible. The disease consists of pigmentation of the skin on exposure to sunlight directly after the application of perfumery and is characterized by dark yellowish streaks on any part of the body to which perfume has been applied, usually the neck. The upper portions of the streaks are hardly visible, but the color grows deeper toward the bottom, giving the appearance of a dark fluid running down. The magnifying glass reveals signs of inflammation in the pigmented area, with dilatation of the capillaries and prominence of the openings of the hair follicles. The factors necessary to its production appear to be (1) the essential oil of bergamot in the perfume, (2) exposure to natural sunlight (experiments with ultraviolet rays have given negative results) and (3) sensitivity of the subject. This type of dermatitis is reported from all parts of the world where women (or men) use perfume, either alone or as an ingredient of other lotions or cosmetics. Owing to the increasing enthusiasm for

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3. Poucher, W. A.: Perfumes, Cosmetics and Soaps, with Especial Reference to Synthetics, ed. 5, London, Chapman & Hall, Ltd., 1936, vol. 2.

4. Goodman, B. S.: Perfume Dermatitis: Case Report with a Brief Review of the Literature, Am. J. Phys. Therapy **9**:16 (April) 1932.

exposure to sunlight and the increasing use of alcoholic vehicles for essential oils, berlock dermatitis appears to be growing more frequent.

HAIR DYES, CLEANSERS AND TONICS

Many persons are led by false claims to believe that certain preparations will restore the natural color of the hair. There is no known substance capable of accomplishing this. Coloring preparations may be divided into rapid and progressive dyes. The rapid dyes are usually applied by professional hair dyers, while the progressive products are applied at home by the user and sold under the name of "hair tonics" or "restorers." They are in most cases solutions of lead acetate or lead chloride with sulfur in suspension. They act by combining with the natural sulfur in the hair to form black lead sulfide, which is the actual coloring matter. Most of the hair dyes on the market today may also be divided into the following groups, according to their chief constituents: (1) aniline dyes, (2) lead salt–sulfur dyes, (3) silver salt dyes and (4) pyrogallol dyes, all of which are capable of producing cutaneous irritation. Lead salts are poisonous when absorbed, and silver salts, while less dangerous, are capable of producing a permanent discoloration of the skin. Pyrogallol is used with metallic salts (copper or iron sulfides) to dye the hair. In certain cases poisoning may result from this type of hair dye.

Henna and indigo dyes are entirely harmless in their pure form but, because of their narrow range of tones, are seldom employed commercially. Numerous synthetic preparations are sold under the name of henna for the sake of its good repute.

In some hair dyes the irritating substance paraphenylenediamine may still be found, in spite of the many serious injuries that have resulted from it. In susceptible persons acute vesiculobullous dermatitis has developed from its use. Periorbital edema is common, and frequently systemic symptoms of toxemia result either from the acute dermatitis or from absorption of the dye. The substance has long since been legislated out of France, Germany and Austria, although these countries still manufacture it for export to the United States.

In 1924 the Section on Dermatology and Syphilology of the American Medical Association [5] sponsored a study of the number of cases of dermatitis resulting from the use of hair dyes then on the market. Paraphenylenediamine was present in a large number of the preparations, among which "inecto" was the chief offender. The following

5. Cole, H. N.: Investigation of Injuries from Hair Dyes, Dyed Furs and Cosmetics, J. A. M. A. **88**:397 (Feb. 5) 1927.

data were obtained as to the incidence of dermatitis resulting from hair dyes:

Barbo Comp.	1	Lux—imported	1
"Black Dye"	2	Perfecto	1
Brownatone	1	Mrs. Potter's Walnut Juice	1
"DeSpotts"	1	Rapidol	1
Eau Sublime (D. brown No. 2)	1	Wyeth's Sage and Sulphur	1
Golden Glint	2	Youth-O-Lede	2
Henna	9	Inecto Rapid No Tox	1
Inecto	17	Not stated	31
Kolor-Bak	1		
		Total	74

The same irritating ingredients are employed in dyes for the eyelashes and eyebrows, where they are even more dangerous to the delicate tissues around the eyes. Disfigurements and even loss of eyesight have been reported from this cause.

Certain hair tonics have been found responsible for cutaneous irritation, although to a far less degree than dyes. They usually contain alcohol, sodium borate, glycerin, quinine and sometimes a little red pepper, but some have been found to contain such dangerous substances as lead, arsenic and mercury.[6]

Materials used in wet and dry shampoos and permanent wave solutions have produced severe dermatitis, frequently affecting the interdigital webs of employees of beauty parlors. The eruption is generally eczematous. Common ingredients in permanent wave solutions are[7]: ammonium carbonate, keratin, hydrous wool fat, cellosolves (monoethyl ether of ethylene glycol), petrolatum, potassium and sodium carbonate, ammonium chloride, sulfonated oils, potassium sulfite and oleic acid.

DEPILATORIES AND DEODORANTS

The fashion of wearing transparent clothing and hosiery has greatly increased the public demand for depilatories. Roentgen radiation is no longer used today for removing superfluous hair because of the danger of radiodermatitis and its sequelae. Electrolysis if skilfully performed is a safe and effective method for permanent removal, but it is time consuming and impracticable for large areas of skin.

Aside from electrolysis there is no effective method for permanently removing hair. The various depilatories on the market today are only temporary in their action and often contain ingredients capable of causing extensive dermatitis and systemic poisoning. Of these, thallium

6. Cosmetics and Allied Preparations, Bureau of Investigation, Chicago, American Medical Association, 1937.

7. Deakins, T. W.: Permanent Wave Solutions, Drug & Cosmetic Indust. **41**:198 (Aug.) 1930.

acetate is the most virulent. It causes the hair to fall out only by constitutional poisoning, which may result from absorption through the skin. This substance is the active principle in "koremlu," a widely advertised depilatory which brought many of its victims almost to the point of death. The concern making this product was forced into bankruptcy in 1932 by numerous damage suits.

Most of the other hair removers contain some form of alkaline sulfide, such as arsenic, calcium, barium, strontium, sodium or potassium. These dissolve keratin. While dissolving the hair they may also act on the outer layer of the skin and cause dermatitis.

"Zip" (rosin and wax) is a widely advertised depilatory that is said to remove the hair permanently. It is applied in the form of melted wax, allowed to harden on the skin and then torn off together with the hair. It does mechanically tear out the hair, but of course the growth returns. In the form of a sulfide cream "zip" is equally futile and has been declared by the Federal Trade Commission to be not only falsely advertised but harmful to the skin.

Although certain susceptible persons have reported irritation from the use of the popular deodorants, these are generally harmless. Their chief ingredients are solutions of aluminum salts and sometimes salicylic acid, which may cause irritation in the presence of increased heat and perspiration.

FACE POWDERS, CREAMS, BLEACHES AND TONICS

At the present time most of the face and body powders made and marketed by reputable firms are practically harmless to the consumer, being composed for the most part of talc, zinc oxide, zinc stearate, precipitated calcium carbonate, kaolin, titanium dioxide and rice starch. Lead, formerly the cause of dermatitis in numerous cases, has been practically eliminated from most face powders. Dermatitis has been reported, however, from the perfumes in the powder. In 1 instance,[8] severe irritation occurred in a young man merely as a result of contact with a friend who used face powder scented with orris. Many of the ingredients of ordinary face powder are potential irritants, which may produce dermatitis among industrial workers who come in contact with large quantities of the raw materials. The same may be said of most cold creams, lotions and so-called skin foods and tissue builders. The most serious charge that can be brought against them lies in the false claims made for their potency. There is no such thing,

8. (*a*) Babalian: Dermites cervicales et sensibilisation par les fourrures teintes et les parfums, Bull. Soc. franç. de dermat. et syph. **37**:496 (April) 1930; (*b*) Montlaur, in discussion on Babalian: ibid. **37**:503 (April) 1930.

for instance, as a skin food that can be applied externally; the skin can receive nourishment only through the circulatory system. "Hormones" can be absorbed through the skin from without, but their use as skin foods is inadvisable because dosage cannot be accurately controlled and because they serve no useful purpose so far as the skin is concerned. All these preparations are beneficial only to prevent excessive dryness and to facilitate massage.

Bleaching preparations for the face and freckle removers fall into the category of dangerous preparations. Their active principle in most cases is some form of mercury, which actually destroys the outer layers of the skin. If they penerate deeply, serious damage is likely to result. Instances of severe burns and bluish gray pigmentation of the skin have been reported following the use of these preparations.

ROUGE AND LIPSTICK

Except for the coloring matter, which is frequently an aniline dye (eosin, rhodamine B and bordeaux red in lipstick have caused dermatitis and photosensitivity), and possibly for the perfumes, the ingredients of rouge and lipstick are relatively innocuous. Rouge is generally composed of talc, titanium, zinc oxide, starch, coloring matter and a binder of acacia or tragacanth.

Lipstick consists chiefly of castor oil, theobroma oil, yellow wax, fat, coloring matter and perfume. The so-called indelible lipsticks are customarily colored with inferior grades of bromoacid dye ($C_{20}H_6O_5Br_4Na_2$; dye 768, Color Index, page 194), which may contain lead or other poisonous material. Dermatitis of the lips (cheilitis) from lipstick is not infrequent in France but is relatively uncommon in the United States. Reports of cases have shown either the perfume or the dye to be the exciting cause in most instances.

One patient gave a reaction of marked dermatitis with necrosis to a patch test with methylheptine carbonate contained in the essential oil of the lipstick perfume. Fifty per cent of control subjects also respond positively to this substance.

PREPARATIONS FOR THE NAILS

Cuticle removers ordinarily contain potassium hydroxide in solution and also salicylic acid and triethanolamine. In high concentrations these substances are capable of destroying the finger nails as well as the cuticle.

Liquid nail polish is simply a lacquer which contains celluloid or duco in a solution of acetone or amyl acetate, together with castor oil, alcohol, ether and dyes.

Liquid polish remover consists chiefly of acetone, which may cause smarting and redness on prolonged contact with the skin.

COMMENT

I have shown in general the various cosmetic preparations that may cause irritation of the skin, ranging from slight erythema to severe burns. It is obvious that any product capable of producing such lesions among consumers is even more dangerous to industrial workers in the cosmetic trade, who are constantly exposed to the raw materials.

Owing to the increasing number of compensable dermatoses in this industry, it has become customary for some manufacturers to employ the patch test for prospective employees. As has been shown, contact with some substances over a period of time may induce hypersensitivity in persons having no previous idiosyncrasy. Moreover, the industrial hazards are still serious, owing to the fact that new chemicals capable of causing cutaneous disease are being constantly introduced. The following list of actual or potential cutaneous irritants used in the cosmetic industry has been compiled from numerous sources:

Harmful Ingredients in Cosmetics.—Lead: Lead acetate is frequently present in hair dyes, notably "barbo compound," "kolor-bak" and "Wyeth's sage and sulphur." In some dyes the lead content is as high as 23 per cent. The substance is sometimes used in face enamels, face creams and theatrical grease paint, its purpose being to impart a feeling of softness to the skin. Employees in factories compounding these cosmetics, as well as barbers, hairdressers and "beauticians," are subject to the hazard of lead poisoning.

Mercury: This is one of the most dangerous poisons used in cosmetics. It is found in some hair dyes but more often in face creams and bleaching preparations, certain of which contain as much as 50 per cent ammoniated mercury; severe inflammations have resulted from their use. A number of such bleaching preparations and freckle lotions analyzed by the laboratory of the American Medical Association have been found to contain mercury bichloride in concentrations of as high as 2.8 per cent. Mercury in the form of mild mercurous chloride is an ingredient of some face creams which have caused a bluish pigmentation of the skin. It is also present in some soaps and permanent waving solutions.

Pyridine: This is a derivative of coal tar with a highly characteristic taste and odor. It is used to denature alcohol and may give rise to eczematous dermatitis among persons who work with denatured alcohols, as in the manufacture of perfumery. Pyridine is a base with a powerful drying effect on both the skin and the mucous membrane. Methyl pyridine, or picoline, has the same effect. Severe dermatitis of

the interdigital webs has developed in hairdressers as a result of contact with "friction" shampoos containing 0.49 per cent pyridine. The residue of such shampoos after evaporation has been found to be irritating when rubbed into the skin.

Denatured Alcohol: Mineralized, methylated or denatured alcohol usually contains alcohol about 90 per cent, wood naphtha 9.5 per cent, crude pyridine 0.5 per cent and mineral naphtha 0.375 per cent and is sometimes colored with methylrosaniline. Although the use of denatured alcohol in cosmetics is illegal in some states, the substance is found in certain hair tonics and "vanishing" shampoos and frequently in perfumes. The United States Public Health Service, in an analysis of sixty-six toilet preparations of various kinds, has reported that 33 per cent contain wood alcohol. This substance is poisonous, and barbers and hairdressers as well as cosmetic makers are subject to dermatitis as a result of handling it (see the section on pyridine). When alcohol is denatured with pyridine and turpentine it has been found experimentally to be much more likely to cause dermatitis than when methyl alcohol alone is used.

Isopropyl Alcohol: Used as a dry cleaner for hair, this chemical is almost as irritating as wood alcohol. It dissolves the fats of the skin, producing chapping and secondary dermatitis and infection.

Arsenic: As an ingredient of hair tonics, arsenic has been traced as the agent responsible for the production of severe inflammation of the scalp and face. In 1925 the Agricultural Experiment Station of Connecticut analyzed "K.D.X. dandruff exterminator" and found it to contain 93 mg. of arsenic per hundred cubic centimeters of alcoholic solution, with a salicylate and glycerin.

Paraphenylenediamine: This drug is widely used in the United States in the dyeing of hair and furs, because it is easily applied, acts rapidly, provides a variety of tones and is a fast dye. When it comes in contact with the skin, unless completely oxidized by hydrogen peroxide, it may produce extensive and severe dermatitis, frequently accompanied with periorbital edema. The presence of paraphenylenediamine in hair dyes and in mascara for darkening the eyelashes and eyebrows has caused so many attacks of dermatitis that manufacturers who employ it in recent years have been forced to revise their advertising which represented the product as harmless. It is claimed that the poison has been entirely eliminated from hair dyes, but reports are still being received of dermatitis from the same preparations. Barbers, hairdressers, dye makers and consumers are exposed to this hazard.

Potassium Carbonate: This substance is used in preparations for "setting" the hair and for dry shampoos and has been responsible for acute dermatitis of the interdigital webs among workers in the hairdressing trade. It is also present in some face creams.

Pyrogallol: Hair dyes frequently contain this substance, which causes irritation around the nails and the interdigital webs of cosmetic workers. Dermatitis also occurs among photographers from contact with pyrogallol in the developing solution.

Alkaline Sulfides: Barium sulfide, barium sulfate, sodium sulfide and calcium sulfide are extensively used in depilatories. "Carles hair depilatory" was reported in 1935 to contain 22.9 per cent barium sulfide, and "delatone," 19.35 per cent, with 1.63 per cent barium sulfate. These irritating substances are frequently responsible for extensive dermatitis, which may result in ulceration.

Thallium Acetate: This is a virulent poison and has been employed in depilatories with systemic effects by absorption through the skin, ultimately causing epilation and paralysis.

Salicylic Acid: Dermatitis often results from contact with this irritant. It is used in some so-called eyelash growers, dandruff exterminators, antiodor and antisweat preparations and lotions for the skin.

Phenol: Although a 1 per cent solution of phenol may irritate the skin, some cosmetic preparations contain it in much stronger solution. Four per cent phenol has been reported in a certain "acne cream" and weaker solutions in some perfumes and hair tonics. Dermatitis may develop in makers of these preparations, who handle the substance in strong solutions. Resorcinol, a diatomic phenol, is occasionally found in hair tonics and bleaches. Cresol is used in synthetic perfumes.

Copper: Contact with strong solutions of this metal over a long period is capable of producing ulceration of the skin. The substance is frequently employed in dyes to darken the hair, occasionally in bleaching preparations for the face and frequently in the higher-priced perfumes, which are said to cause the greater number of attacks of dermatitis. This ingredient may constitute a hazard to hairdressers and makers of hair dyes, bleaching substances and perfumes.

Ammonium Carbonate: This substance is used in wave-setting lotions, in permanent wave solutions and in some hair dyes, and is capable of producing cutaneous irritation in makers of these preparations and in hairdressers.

Sodium Carbonate: This substance, commonly known as washing soda, is used in some permanent waving solutions to impregnate the pads placed around the curls of hair. Dermatitis of the hands among hairdressers has been reported to result from handling these pads.

Silver Nitrate: Although this is one of the less dangerous chemicals sometimes found in hair dyes, it may be absorbed into the circulation after prolonged contact and give rise to argyria.

Aluminum Salts: Aluminum salts in certain deodorizers have been responsible for dermatitis.

Quinine: This alkaloid enters into a number of hair tonics and lotions for use on the face after shaving. It is also employed as a denaturant of alcohol in some toilet waters. Dermatitis may develop among hypersensitive persons from contact with this ingredient.

Quinone Bodies: It is claimed that quinone imines and diimines, formed by the oxidization of paraphenylenediamine during the process of dyeing, are the irritants which cause dermatitis due to paraphenylenediamine (see the section on paraphenylenediamine).

Acetone: As a solvent, this material is combined with collodion to make liquid nail polish. Dermatitis of the face has been reported from contact with finger nails covered with this dressing. The same substance is the active principle of nail polish remover.

Bakelite: This is an artificial resin made of phenol and formaldehyde. It is extensively used for fountain pens, ear phones, bottle caps and innumerable other articles. It has produced dermatitis among employees of perfume and cosmetic factories engaged in capping bottles and among beauty parlor employees who come in contact with bakelite fittings. This occurs most frequently in warm weather, when perspiration is active.

Colocynth: Eczema of the hands among hairdressers has been traced to this substance, which is a component of brilliantine and also of denatured spirits frequently used in their work. The pure spirits gave no reaction, but when the colocynth spirit was rubbed in an immediate irritation occurred.

Dimethyl Sulfate: This is a volatile oily fluid used by workers in perfumes. It is highly irritating to the skin.

Nitrobenzol, Nitrobenzene or Oil of Mirbane: This substance is highly irritating to the skin. Makers of dyes from tar aniline, perfume makers and deodorant makers are subject to contact with it. It is also poisonous when inhaled as a vapor.

Essential Oils: Of the essential oils used in perfumes, oil of bergamot has been the most frequent cause of dermatitis. Many instances have been reported of dermatitis venenata and of berlock dermatitis from contact with this ingredient.

Oils of linaloa, cassia, lavender, turpentine, orange and lemon peel, bitter almond, ihlang-ihlang and orris are among the natural oils employed in the manufacture of perfumes which have been found to cause cutaneous irritation. Face powders, lipsticks, face creams and lotions which contain perfume may also cause dermatitis on contact with the skin.

Synthetic Oils: Among the synthetic volatile oils, methylheptine carbonate has produced marked dermatitis with necrosis when present in various cosmetics such as face creams and lipstick. This substance is used for the production of artificial violet and jasmine odors.

Eggs: Certain skins are hypersensitive to contact with raw eggs. Used in hairdressing parlors for shampooing the hair, they have been known, though rarely, to give rise to typical dermatitis venenata.

Alum: Used in some face creams as an astringent and frequently in deodorants, this ingredient is excessively drying to the skin and may result in severe irritation.

Talc: This is the chief component of the majority of face and body powders. In a pure state it is innocuous, but it can seldom be found free from impurities. These are almost impossible to remove and are capable of causing irritation of the skin among workers in cosmetics.

KLINE FLOCCULATION TEST

ITS SIGNIFICANCE AND APPLICATION IN THE OBSTETRIC SERVICE OF THE QUEENS GENERAL HOSPITAL

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At the Queens General Hospital the Kline precipitation test by both diagnostic and exclusion procedures is done routinely. If both procedures give a completely negative result, no other serologic test is considered necessary. Whenever the Kline test shows any degree of positiveness, a Wasserman test is performed. The results of the precipitation and of the complement fixation test do not always agree exactly. This has caused some confusion in the minds of the clinicians. In an attempt to clear up this doubt, a study was conducted to interpret the significance of the serologic tests in terms of clinical syphilis. As Moore [1] recently pointed out, each laboratory must determine the reliability of its own reports if they are to have any value. That serologic tests are of prime importance in the diagnosis of syphilis must be accepted when it is considered how few patients give a history or clinical evidence of the disease. The tests become most important in the obstetric service, where no other diagnostic aid is available in the vast majority of cases. To label a woman syphilitic may mean a catastrophe in her family life. How important it is, then, not to make a wrong diagnosis.

I. HOW RELIABLE AS A SEROLOGIC DIAGNOSTIC TEST FOR SYPHILIS IS THE KLINE TEST AT THIS HOSPITAL?

1. If the exclusion test gives a negative result, the serologic changes will be negative by every other test used in this laboratory. Of 270 cases in which all three tests were made, the exclusion test gave a negative result in 170. Every negative exclusion test was accompanied with a negative Kline diagnostic test. Among 170 cases in which the Kline exclusion test gave a negative result, there was an accompanying positive Wassermann reaction in 2.

2. In all but 6 cases a negative reaction to the diagnostic test was followed by a negative Wassermann reaction. Of these 6, there was

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1. Moore, J. E.: The Modern Treatment of Syphilis, Springfield, Ill., Charles C. Thomas, Publisher, 1933.

a questionable 2 plus reaction to the complement fixation test in 1, and in the other 5 the Wassermann reaction was plus-minus. Only 1 negative reaction to the diagnostic test was accompanied with more than a plus-minus exclusion reaction, and in that case the reaction to the exclusion test was 1 plus. This demonstrated merely the higher sensitivity of the exclusion as compared with the diagnostic procedure and the close agreement of both modifications of the Kline test when the reaction of the blood is negative.

From this it may be concluded that when a combination of the diagnostic and the exclusion test gives a negative result the patient may be considered to react negatively to every other test, and a negative Kline diagnostic and exclusion test need not be followed by a complement fixation procedure. This constitutes a saving of time, labor and expense.

3. The other reliable reactions were the strongly positive ones, in cases in which the reagin in the blood was so abundant that it gave a strong reaction to all tests. In 67 cases the diagnostic Kline test gave a strongly positive result. Of these, the Wassermann reaction was questionable or negative in 8 cases, but the exclusion reaction was positive in all. Kline [2] expressed the belief that treatment can produce such variance in results. When such variance is present, repeated serologic study and a provocative reaction, if deemed necessary, are certainly warranted. I investigated these 8 cases and found that they could be classified under four headings:

1. Those in which there were lesions of from ten to sixteen years' duration and a history of some early treatment.

2. Those of aged patients, in 1 of which there had been a lesion thirty years ago.

3. Cases of early secondary syphilis.

4. One case in which repetition of both tests gave positive results.

In 145 cases the exclusion reaction was strongly positive. In 90 of these the Kline diagnostic and also the Wassermann reaction were strongly positive, but in the other 55 the complement fixation reaction was questionable or negative. Again, according to Kline, this could be the effect of treatment, but it serves to prove the high sensitivity of the exclusion test. In all the 500 cases studied there was no example of a strongly positive reaction to the diagnostic Kline test without an accompanying positive reaction to the exclusion test; in fact, the exclusion test, as might be expected from its sensitivity, produced a reaction always equally or even more positive than the diagnostic test.

2. Kline, B. S.: Evaluation of the Results of Flocculation Tests for Syphilis in the Recent American Conference: Outline of Studies for Standardization of These Tests, Am. J. Clin. Path. **7**:134 (March) 1937.

A strongly positive reaction to the exclusion test was followed in 9 cases by a 2 plus questionable but never by a negative reaction to the diagnostic test. In other words, the two analogous flocculation methods agreed in 98 per cent of cases. In every case in which the precipitation test gives a positive result a complement fixation test should be performed. In the event that a discrepancy exists, tests should be repeated and a provocative test performed. If the discrepancy persists, the Kline precipitation test is more likely to be correct. This was confirmed by my study of mothers known to have syphilis, in which in 25 cases prenatal, postpartum and cord blood gave a 1 plus or a negative Wassermann reaction in the presence of a 3 or 4 plus Kline reaction.

II. HOW RELIABLE AS A SEROLOGIC DIAGNOSTIC TEST FOR SYPHILIS IS THE WASSERMANN COMPLEMENT FIXATION TEST AT THIS HOSPITAL?

In 106 cases the Wassermann reaction was strongly positive. In 94 of these the reaction to the Kline exclusion test was also strongly positive, and in the other 12 the Kline exclusion reaction ranged from doubtful to 2 plus. The Kline exclusion test produced no negative results in this group. This stresses the importance of following a plus-minus Kline exclusion test with the complement fixation procedure. Of the 106 specimens of blood which gave a positive Wassermann reaction the Kline diagnostic test gave a strongly positive result in 78, a 2 plus reaction in 26 and a negative reaction in 2. This indicates that a negative reaction to the Kline diagnostic test alone may not be reliable.

There were several discrepancies such as a weak reaction to the Kline test and a strongly positive Wassermann reaction in children who had associated conditions, such as rheumatic endocarditis, miliary tuberculosis, lobar pneumonia and simple fracture (1 case). Two of the patients were suffering from cancer. When a discrepancy exists, the tests must be made repeatedly, and, if necessary, provocative treatment must be given, just as in cases of doubtful serologic reports and no clinical findings or history.

III. IN WHAT PERCENTAGE OF CASES WILL THE KLINE TEST GIVE FALSE POSITIVE RESULTS?

From the reports studied in this series it would be impossible to answer that question, because histories of cases were not used. In one third of 145 cases there was a positive reaction to the precipitation test and a negative or doubtful reaction to complement fixation. Both the American and the Montevideo Committee on Evaluation of Serologic

Tests for Syphilis reported that the Kline test is one of seven flocculation tests with an incidence of less than 1 per cent of false positive results. When the Kline reaction is persistently and strongly positive and the Wassermann reaction persistently negative and no clinical evidence or history of syphilis exists, the case should be considered one of syphilis. I have seen such results at times in mothers known to have syphilis who at other times gave positive reactions to all serologic tests.

IV. WHAT IS THE SIGNIFICANCE OF A PLUS-MINUS EXCLUSION REACTION IN THE LABORATORY?

The series proves the importance of a plus-minus reaction, which must always be followed by another reliable test. Of 500 cases there were 170 in which the exclusion reaction was plus-minus. Of these, 101 gave a negative reaction to the Kline diagnostic and the Wassermann test, and 39 gave a doubtful reaction to the diagnostic test and a negative reaction to complement fixation. Reactions like these are a little more specific, although still highly sensitive. In the absence of clinical findings, the 140 patients in these two groups may be considered nonsyphilitic, but when there is a history or clinical evidence of syphilis, such results must be considered weakly positive. Nine patients had a plus-minus reaction to all three tests. Without clinical findings or history, I feel that they may be considered nonsyphilitic; 8 patients gave plus-minus exclusion and Wassermann reactions but a negative reaction to the diagnostic test. It must be assumed that an error of no importance has entered here. The most important consideration in regard to the plus-minus exclusion reaction is furnished by the remaining 13 cases, in which the Wassermann reaction ranged from 1 to 3 plus in the presence of a plus-minus reaction to the Kline exclusion test. Such results indicate the need for repeated and even for provocative tests. When repetition of a test is required it is important that the request be labeled "repeat," so that a Wassermann as well as a Kline routine test will be carried out. Otherwise, if the Kline exclusion test gives a negative result a complement fixation test will not be given. However, I wish to stress that in only 2 cases in this series was a negative reaction to the Kline exclusion test associated with a Wassermann reaction of any degree of positiveness.

V. WHAT IS THE SIGNIFICANCE OF THE QUESTIONABLE SEROLOGIC REACTIONS?

According to Moore,[1] a questionable serologic reaction from a laboratory known to use a reliable test indicates a low titer of reagin in the serum by any test. That statement is more apt to be reliable in connection with flocculation than with complement fixation tests, because

certain interfering factors, like high amboceptor content, mild bacterial contamination and unknown substances, are eliminated. A 1, 2 or even 3 plus reaction always warrants repetition until the presence or absence of the disease can be definitely established. There was a questionable reaction to the Kline diagnostic test in 115 cases, and to the Wassermann test in 92 cases; in the majority of cases there was a definite positive reaction to one or the other test. When such a difference exists between the flocculation and the complement fixation reaction the tests must be repeated.

VI. HOW ACCURATE ARE THESE TESTS WHEN APPLIED IN CASES OF KNOWN SYPHILIS?

The aforementioned serologic tests were applied to a group of 50 syphilitic mothers whose babies were delivered in this hospital, with a view to demonstrating the accuracy of the tests and the effect, if any, of treatment and parturition on the reaction of the blood. The serologic changes in the cord and in infants were observed as far as possible. During the prenatal period, of all tests, the exclusion procedure was found to be the most sensitive. The diagnostic test was found to give a doubtful reaction in a few instances, and the complement fixation test gave negative results in a few instances. From this I should infer that of the tests used the most important one for the pregnant woman is the Kline exclusion-precipitation test, and that a complement fixation test alone is not a reliable guide. When an exclusion test shows a reaction of any degree of positiveness, the case must be thoroughly investigated until a diagnosis of syphilis is made or excluded. This procedure acts like a caution light and should not be disregarded. Occasionally a patient whose blood gives a plus-minus exclusion reaction at a later date shows a definitely positive result.

In a total of 41 tests made on some of these women post partum, the exclusion test was found to be the most sensitive in all but 1 case, in which the reaction to the exclusion test was doubtful, to the diagnostic negative and to the complement fixation 3 plus. In prenatal tests in this case the exclusion test had been most sensitive throughout. This patient had received no treatment.

In 4 cases the postpartum Wassermann reaction was negative. The significance of this statement should not be overlooked. When only a postpartum Wassermann test can be made on a patient, as in cases in which there has been no prenatal care, this serologic test becomes all important. If only a complement fixation test is done, the presence of syphilis may be missed. One patient in this series had had blood tests at two other hospitals, one two and one five years before. Both had been reported as negative. The presence of syphilis was established by precipitation tests. She had never received treatment. In eleven

instances the Wasserman tests gave a doubtful or a 1 plus reaction. This stresses the importance of a low degree of positiveness in the complement fixation test. I have reason to believe that many physicians discard such a report as negative. Of the 15 mothers giving a doubtful or a negative reaction to the Wassermann test, only 8 had received adequate treatment, so that one cannot infer that treatment had affected the results of the test.

In a review of tests on cord blood many interesting observations were made. Again, the exclusion-precipitation test was found to be the most reliable, the clinical history of the mother being known. The possibility that cord blood contains reagin from the mother and is probably not diagnostic of syphilis in the child must be kept in mind. If such a statement is accepted, there is no value in examining cord blood for syphilis when maternal blood is examined as a routine measure. In no case was cord blood found to be positive when the reaction of the mother's blood was negative. Occasionally, when the mother's blood gave a weak positive reaction, the cord blood was found to be negative. Treatment may also have such an effect on cord blood in the presence of a weakly positive reaction of the maternal blood.

In 2 cases out of 80, a 3 or 4 plus reaction to a precipitation test of cord blood was found, with only a 2 plus reaction of maternal blood. Such a small difference is of no importance if a 2 plus reaction is accepted as positive in the diagnosis of syphilis. I wish to stress here again the importance of thoroughly investigating any case in which any serologic test—precipitation or complement fixation—shows any degree of positiveness.

Serologic examination of the newborn of every syphilitic mother is made at this hospital. I am not ready to accept the results as diagnostic of the presence or absence of syphilis in the baby, because of the opinion held by some authorities that reagin from the mother is to be found in the serum of the offspring at or soon after birth. However, in these tests also, the exclusion procedure was found to be the most reliable. The baby's serologic reaction was as positive or less positive than the mother's but never more positive. There is no uniformity of either maternal and cord blood or fetal and cord blood. From this analysis, I should conclude that in this hospital the diagnosis of syphilis is as good as its most sensitive test, viz., the Kline exclusion-flocculation test. I advocate that when an exclusion test shows any degree of positiveness, tests must be repeated as many times as necessary to arrive at a diagnosis and that provocative tests also are indicated in such cases.

SUMMARY

Since the diagnosis of syphilis frequently rests on serologic tests alone, a study was conducted at the Queens General Hospital to determine the reliability of the tests used. Five hundred routine reports of serologic examination, including the Kline precipitation test, both diagnostic and exclusion, and the complement fixation test were studied. A comparison is made of the three tests to determine their relative sensitivity and specificity.

A similar study was done in 50 cases in which the mother was known to have syphilis because of either a history of acquired syphilis or repeated tests of her blood during the prenatal period and during the puerperium, of the cord blood and of the baby's blood. In most cases tests of these four specimens had been performed. This gave approximately 200 tests, a large enough group to have representative value.

CONCLUSIONS

In the laboratory of the Queens General Hospital:

1. The Kline exclusion test is the most sensitive one.

2. If the exclusion and the diagnostic flocculation procedure both give negative results, the reaction to all tests may be considered negative in practically all cases.

3. If the exclusion test gives a doubtful result, careful investigation must be made of the serum by the Kline diagnostic and the complement fixation method.

4. If there is a marked discrepancy in the results of the three tests, repeated testing and testing after provocative treatment must be resorted to, especially when the history and the symptoms cannot be relied on in diagnosis.

5. It must be stressed that anything from a plus-minus to a 4 plus result is a positive reaction, and the case must be thoroughly investigated before a diagnosis of syphilis is discarded or accepted.

6. In this laboratory, if a discrepancy persists between the precipitation and the complement fixation test, the burden of proof is considered to rest with the precipitation test.

7. This study points out the inadvisability of depending on a complement fixation test alone to determine a diagnosis of syphilis.

TREATMENT OF DERMATOPHYTOSIS WITH VACCINES

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The need for a specific treatment for dermatophytosis arises from several factors. The disease is common; it is frequently obstinate; it is sometimes disabling; it predisposes to occupational dermatoses, and it tends to recur. General physicians as well as dermatologists are confronted with the problem in their practices.

The causal relation, in many cases, between ordinary fungous infections of the feet and secondary eruptions on the hands and other parts of the body has been established to the satisfaction of most dermatologists. The fact that the blood stream may be invaded has been demonstrated on a few occasions. The altered reactivity of the skin in these infections and the specificity of the trichophytin test are generally accepted.

With such bases, it is obvious that treatment should have been approached along immunologic lines. The first steps in this direction were taken with the idea of desensitizing the skin. The secondary eruptions in dermatophytosis—the "ids"—have been shown to be due to a specific hypersensitivity of the skin to the fungus and/or its products. With this fact in mind, several investigators attempted to desensitize the skin with a fungus extract (trichophytin). In a carefully observed and controlled series of 135 cases of dermatophytosis, in many of which there were secondary manifestations, we [1] demonstrated that the desensitization of the skin which we accomplished in a considerable number of cases with intradermal injections of trichophytin was only temporary. Those patients who were desensitized and who returned to us because of a recurrence of the eruption showed a return of the same hypersensitivity to trichophytin that they had before the course of treatment. The period of desensitization varied from two weeks to several months. We also showed conclusively that desensitization of the skin with trichophytin had little effect on the course. We found no

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1. Traub, E. F., and Tolmach, J. A.: Dermatophytosis: Its Treatment with Trichophytin, Arch. Dermat. & Syph. **32**:413 (Sept.) 1935.

evidence to encourage the hope that immunity could be induced by these injections.

Our next step in the treatment of dermatophytosis along immunologic lines was with convalescent serum. On the basis of reports that fungicidal elements existed in the serum of patients with dermatophytosis, we prepared a convalescent serum. Blood was taken from patients at the time when the eruption disappeared, regardless of the type of treatment. We assumed that the fungicidal elements were at their maximum number or strength at that point. Wassermann and Kahn tests were performed. The serum was used for only two or three weeks and then discarded. No preservative was added. The dose ranged from 1 to 3 cc. subcutaneously every five to seven days. We reported the results before the Dermatologic Congress in Budapest, Hungary, in September 1935. Though we demonstrated several interesting findings, in the main, the results were poor.

Comparatively recently vaccine therapy has received wide publicity. This differs from previous treatment with fungus extract (trichophytin) in that toxic products together with fungous elements are utilized. The favorable reports published by several authors have stimulated the widespread use of vaccine therapy by general physicians and dermatologists.

We have studied the results of such treatment in 65 cases of dermatophytosis (in which the diagnosis was proved clinically, microscopically and culturally). We divided our cases into three groups and used three different vaccines, with no other treatment.

Our results have been so regularly unfavorable that we feel impelled to publish them, in order to discourage the waste of patients' time and money and physicians' efforts and to point out that much more experimental work is necessary before such products have any practical use.

METHOD

Of the three vaccines used, two were prepared in our laboratories and one was a commercial product (dermatomycol). A heat-killed vaccine was prepared according to the method suggested by Robinson and Grauer.[2] We made two heat-killed vaccines, one with Trichophyton interdigitale and one with Microsporon lanosum. We also prepared an acid-killed vaccine with T. interdigitale, according to the method outlined by Jausion and Sohier.[3] The third type of vaccine used was dermatomycol, a "polyvalent vaccine prepared from equal parts of 325 strains of Trichophyton, Microsporon, Achorion, Endodermophyton, Epidermophyton and Oidium-like fungi." This, too, is an acid-killed vaccine. The heat-killed vaccine was administered intracutaneously and the acid-killed varieties

2. Robinson, G. H., and Grauer, R. C.: Use of Autogenous Fungus Extracts in the Treatment of Mycotic Infections, Arch. Dermat. & Syph. **32**:787 (Nov.) 1935.

3. Jausion, H., and Sohier, R.: Bull. Soc. franç. de dermat. et syph. **36**:442, 1929.

subcutaneously. Injections were given as nearly as possible every three to five days. In some cases in which the patient could not return more frequently, injections were given only once weekly. No accompanying treatment, like application of salves or roentgen irradiation, was prescribed. This permitted a more accurate evaluation of the treatment.

RESULTS

As will be noticed in table 1, a total of 65 patients were treated. Many more were treated with the heat-killed vaccine and dermatomycol,

TABLE 1.—*Results of Treatment*

Agent	No. of Cases	No. of Injections	Average No. of Injections	Cure	Slight Improvement	Much Improvement	No Improvement
Heat-killed vaccine.....	27	4-22	11.2	3 (11%)	5 (18%)	3 (11%)	16 (59%)
Acid-killed vaccine.....	16	4-11	6.7	2 (12½%)	2 (12½%)	3 (18%)	9 (56%)
Dermatomycol.....	22	4-15	9.7	1 (4½%)	2 (9%)	4 (18%)	15 (68%)

TABLE 2.—*Results of Treatment of Dermatophytosis with Specific Organism (Trichophyton Interdigitale)*

Agent	No. of Cases	Cure	Slight Improvement	Much Improvement	No Improvement
Heat-killed vaccine.....	13	1 (7%)	2 (14%)	2 (14%)	8 (61%)
Acid-killed vaccine.....	4	0	0	1 (25%)	3 (75%)

TABLE 3.—*Results of Treatment of Tinea Capitis with Specific Organism (Microsporon Lanosum)*

Agent	No. of Cases	No. of Injections	Average No. of Injections	Cure	Slight Improvement	Much Improvement	No Improvement
Heat-killed vaccine.....	4	6-14	10	0	1 (25%)	1 (25%)	2 (50%)

but owing to irregularity of visits and early discouragement and discontinuance of treatment, they could not be included in our report.

Table 2 shows the results of treatment of dermatophytosis with the specific organism. T. interdigitale was recovered in 17 cases, and in these treatment with heat-killed or acid-killed vaccines made with this fungus was used. There were probably more cases in which this organism was causative, but cultures are not always obtained.

Table 3 shows the results in 4 cases of tinea capitis in which M. lanosum was recovered by culture. Some good results were reported in these cases with heat-killed M. lanosum vaccine. In 1 case there was slight, and in another much, clinical improvement. In 2 cases the condition remained unchanged. In the cases of clinical improvement fungi were always present microscopically. In all 4 cases eventual cure was effected by other means—in 2 with sulfur ointment and in 2 with roentgen radiation.

COMMENT

An analysis of our results shows some outstanding features. Regardless of the type of vaccine or the type of involvement, the number of cases in which the condition was entirely uninfluenced by the treatment remains high and approximately the same—over 60 per cent. The number of cases of cure (?) and of improvement are consistently low and, in fact, are lower than the figures indicate. For instance, the gradation between no change and slight improvement is so slight that one's findings are liable to be subjective rather than objective. It is conceivable that other observers might have included our cases of slight improvement in the "no improvement" column. Another thing to remember is the fact that dermatophytosis is a capricious disease, and frequently marked improvement will be noted even without treatment. Periods of spontaneous improvement are just as likely as not to be followed by periods of exacerbation. Cases were listed in the "cure" column when no eruption was seen at the time of the last injection. However, all dermatologists have unfortunately encountered many cases of apparent cure, regardless of the type of treatment, in which a recurrence appeared within from a few days to a few weeks. Peculiarly, in our past experience of treatment of dermatophytosis with trichophytin and with convalescent serum we obtained a small percentage of good results and a large percentage of poor results. In other words, all the biologic methods of treatment seemed, in our experience, to give a small percentage of good results. With intradermal injections of fungus extract (trichophytin), we obtained 10 per cent of cures. With subcutaneous injections of convalescent serum in a small series of cases, we showed cures in 28 per cent. In this present series of cases, in which treatment was with vaccines, we obtained cures in 9 per cent. If we did not doubt the accuracy of the term "cure" in these cases and if the series treated with convalescent serum had not been small, we might be tempted to state that on the basis of results that agent showed the most hopeful possibilities. However, this leads to the question whether there are some good features in all the biologic methods, though they are different from each other, or whether the small number of good results was merely coincidental with some unknown factors which may influence the disease. It is our personal opinion that if three different approaches

to the biologic treatment of dermatophytosis gave approximately the same small percentage of good results, the reasons for the so-called good results are to be sought elsewhere. That is not to say, however, that biologic treatment is a closed issue. On the contrary, we feel that further work will have to be done because it may be that the approach is a correct one and the technic faulty.

At this point we wish to express another personal belief. We feel that the routine use of fungus extracts or vaccines by the dermatologist and the general practitioner is not yet justified by the results obtained. The work to be done in this field should still be considered experimental only.

SUMMARY AND CONCLUSIONS

Sixty-five patients with dermatophytosis, dermatophytosis with "ids" and tinea capitis were treated with fungus vaccines.

Three different vaccines were used.

Over 60 per cent of patients were entirely uninfluenced by the treatment.

About 9 per cent were apparently cured.

The reports of cure and of improvement are subject to question.

Vaccine treatment of dermatophytosis is not yet practical.

Further experimental work is necessary.

Miss Elinore Whitney and Miss Mary Hopper assisted in the preparation of the vaccines.

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EVALUATION OF THE FREI TEST WITH MOUSE BRAIN ANTIGEN

COMPARISON WITH HUMAN ANTIGEN

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Today the number of cases of lymphogranuloma venereum recognized has greatly increased, no doubt through better diagnosis. This has been observed by workers in different countries. At the Bellevue Hospital more than 100 cases have been followed in the past three years.

Typical lymphogranuloma of the inguinal type is fairly easy to recognize clinically. However, in cases of atypical buboes and rectal strictures great help has been given by the Frei test.

The present study was prompted by the difficulty in determining whether the result of a Frei test was positive or negative in a fairly large percentage of cases.

Frei [1] first published his observations on the use of an antigen derived from the pus of an unruptured bubo in a case of lymphogranuloma venereum. He proved that the intradermal injection of this antigen was useful as a diagnostic aid. The value of the test has been corroborated by Flandin and Turiaf,[2] Photinos and Relias,[3] Pautrier and Weiss,[4] Nicolas and Favre [5] and others.

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1. Frei, W.: Eine neue Hautreaktion bei Lymphogranuloma inguinale, Klin. Wchnschr. **4**:2148 (Nov. 5) 1925.

2. Flandin, C., and Turiaf, J.: Technique et valeur de la réaction de Frei dans la maladie de Nicolas-Favre, Bull. Soc. franç. de dermat. et syph. **43**:320 (Feb.) 1936.

3. Photinos, G., and Relias, A.: Quelques remarques sur la réaction de Frei, Ann. d. mal. vén. **31**:667 (Sept.) 1936.

4. Pautrier, L.-M., and Weiss, A. G.: Sur la valeur de l'intradermo-réaction de Frei (résultats négatifs obtenus sur 51 cas témoins indemnes de la maladie de Nicolas-Favre), Bull. Soc. franç. de dermat. et syph. (Réunion dermat.) **41**: 625 (April) 1934.

5. Nicolas, J., and Favre, M.: Nouvelle pratique dermatologique, Paris, Masson & Cie, 1936, vol. 4, p. 485.

Because of the difficulty of obtaining sufficient pus of human patients for preparing antigen, infected brains of animals were used as a source of antigen.

Hellerström and Wassen [6] discovered that the virus of lymphogranuloma venereum could be transmitted by intracerebral inoculation of monkeys. Levaditi, Ravaut and Schoen [7] first showed the susceptibility of the mouse to the virus. Grace and Suskind [8] proved that potent antigen could be obtained from infected mouse brain and that an emulsion of normal mouse brain gave no appreciable reaction in the majority of cases. Strauss and Howard,[9] from their observations in a few cases, claimed that mouse brain antigen was not suitable for the test. Grace and Suskind,[10] however, conclusively demonstrated the specificity of mouse brain antigen for lymphogranuloma venereum from a study of 595 tests. Mesrobeanu and Bruckner [11] compared mouse brain antigen, emulsion of normal mouse brain and antigen prepared from pus of human patients. They concluded that mouse brain antigen produced a specific reaction but was difficult to evaluate because it also yielded some nonspecific reactions. They used 0.2 cc. intradermally and read the reaction in forty-eight hours. Von Haam and Hartwell [12] found mouse brain antigen satisfactory.

Our experience with 398 tests with mouse brain antigen substantiates the work of Grace and Suskind.[10] We also present data to establish suitable criteria for the evaluation of the test.

Our tests were performed on patients who presented clinical features of lymphogranuloma venereum. We have eliminated all patients whose test was the sole basis for a diagnosis, since that is the factor which

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6. Hellerström, S., and Wassen, E.: Lésions de méningo-encéphalite chez les singes aprés l'inoculation intracérébrale de lymphogranuloma inguinale, Internat. Cong. Dermat. & Syph., 1930.

7. Levaditi, C.; Ravaut, P., and Schoen, R.: Réceptivité de la souris à l'égard du virus de la maladie de Nicolas et Favre, Compt. rend. Soc. de biol. **109**:285 (Feb. 5) 1932.

8. Grace, A. W., and Suskind, F. H.: Successive Transmission of Virus of Lymphogranuloma Inguinale Through White Mice, Proc. Soc. Exper. Biol. & Med. **32**:71 (Oct.) 1934.

9. Strauss, M. J., and Howard, M. E.: The Frei Test for Lymphogranuloma Inguinale: Experiences with Antigens Made from Mouse Brain, J. A. M. A. **106**:517 (Feb. 15) 1936.

10. Grace, A. W., and Suskind, F. H.: Use of Standardized Mouse Brain for Performance of Frei Test, J. A. M. A. **107**:1359 (Oct. 24) 1936.

11. Mesrobeanu, I., and Bruckner, I.: Sur l'utilisation de l'antigène murin pour la réaction de Frei, Compt. rend. Soc. de biol. **124**:978, 1937.

12. von Haam, E., and Hartwell, R.: Value of Mouse Brain Antigen for Diagnosis of Lymphogranuloma Inguinale, Proc. Soc. Exper. Biol. & Med. **36**: 269 (April) 1937.

we are evaluating. Control subjects consisted of persons with no suspicion or history of lymphogranuloma venereum.

The tests were performed by injecting 0.1 cc. of mouse brain antigen intradermally on the flexor surface of the forearm. The same amount of emulsion of normal mouse brain was injected in the forearm, at a considerable distance distal to the first site, as a control.

The usual reaction to mouse brain antigen in cases of lymphogranuloma is a dark red papule which appears within twenty-four hours and is surrounded by a large erythematous areola. This papule increases in size for three or four days and remains unchanged or gradually decreases in size for the next two or three weeks. The surrounding erythema usually becomes less intense after the third or fourth day. In many cases this area may be edematous during the first two days. Intense reactions may also be papulovesicular or papulopustular. In some cases the reaction may be intense enough to produce suppuration and scarring. Bacteriologic examination does not show the presence of bacteria.[5]

The intradermal injection of emulsion of normal mouse brain as a control produces a reaction similar to that of the antigen during the first day. This decreases rapidly up to the third or fourth day, after which it increases slightly up to the sixth day.

In normal persons used as controls the reaction to mouse brain antigen and to emulsion of normal mouse brain is about the same as that to emulsion of normal mouse brain in patients with lymphogranuloma venereum, except that there is no increase in size after the fourth day. Emulsion of normal mouse brain gives a slightly weaker reaction in control subjects than mouse brain antigen. Both reactions in controls diminish and are scarcely palpable in five or six days in the majority of cases.

The area of infiltration due to mouse brain antigen should remain larger than 6 mm. for at least a week to justify considering the results of the test positive. This approximate size can readily be estimated after a number of these tests have been seen. The exact measurements used in this work were for evaluation of the test and are not necessary in routine reading.

The reaction to the Frei test is negative during the early stage of the disease, becoming positive from two to five weeks after the appearance of the bubo. It gradually increases in intensity and apparently remains positive thereafter. In many cases there is an intense reaction years after the onset of the disease, in the absence of any signs of activity.

The strong reactions in persons with lymphogranuloma venereum and the mild reactions in control subjects present no difficulty in evalu-

ation. A fairly large percentage of reactions, however, are difficult to evaluate, because the milder reactions of patients with lymphogranuloma approach the stronger reactions of the control subjects. Since the dividing line in regard to size between a positive and a negative reaction is not sharp, other factors must be considered in evaluating borderline reactions, including optimum time of reading the reaction, its duration and its corresponding relation to the reaction to emulsion of normal mouse brain.

The use of Frei antigen intravenously is another aid in diagnosis, especially in cases of doubtful diagnosis. A report of such use of the antigen will soon be published by us.

The main problems to be considered in this study are (1) the optimum time to read the reaction and (2) the relation between the

TABLE 1.—*Percentage of Subjects Giving Mild, Intermediate and Strong Reactions Based on Daily Measurements*

Patients with Lymphogranuloma Venereum (98)

A. Mouse Brain Antigen							B. Emulsion of Normal Mouse Brain						
Days.....	1	2	3	4	5	6	Days.....	1	2	3	4	5	6
Group 1....	9	8	6	5	5	5	Group 1....	73	82	90	90	87	86
Group 2....	28	27	29	26	26	32	Group 2....	14	17	9	9	12	7
Group 3....	63	65	65	69	69	63	Group 3....	13	1	1	1	1	7

Controls (176)

C. Mouse Brain Antigen							D. Emulsion of Normal Mouse Brain						
Days.....	1	2	3	4	5	6	Days.....	1	2	3	4	5	6
Group 1....	74	77	82	87	87	87	Group 1....	89	91	93	94	96	97
Group 2....	14	19	13	9	11	10	Group 2....	6	7	5	5	2	2
Group 3....	12	4	5	4	2	3	Graup 3....	5	2	2	1	2	1

reaction to mouse brain antigen and that to emulsion of normal mouse brain in the same person.

To collect data for evaluating the test, 98 persons with lymphogranuloma venereum and 176 control subjects were tested with mouse brain antigen and with emulsion of normal mouse brain. The reactions were measured daily for six days, the size of the area of infiltration in millimeters being recorded.

For classification, the reactions were divided into three groups, mild, strong and intermediate, arbitrarily as follows: group 1 (mild reaction), 0 to 5.5 mm. in diameter; group 2 (intermediate reactions), 6 to 7.5 mm., and group 3 (strong reactions), 8 mm. and larger.

The percentage of reactions in each of the three groups on consecutive days is charted in table 1. The reactions of patients with lymphogranuloma venereum to mouse brain antigen are shown in part A and to emulsion of normal mouse brain in part B. Those of control subjects to mouse brain antigen are shown in part C and to emulsion of normal mouse brain in part D.

The great majority (69 per cent) of patients with lymphogranuloma venereum gave reactions to mouse brain antigen which fell into the third group (strong reactions). A fairly large number (26 per cent), however, gave reactions which fell into the second group (intermediate reactions). The interpretation of reactions in this group is doubtful. The corresponding reaction to emulsion of normal mouse brain is of great importance in these cases as an evaluation of the test. This point will be considered later.

Control subjects gave reactions to mouse brain antigen which fell predominantly (87 per cent) in the first group; 10 per cent of the reactions were in the second group.

For both patients with lymphogranuloma venereum and control subjects the reactions to emulsion of normal mouse brain were largely (85 to 95 per cent) in the first group. The majority of these reactions were not appreciable.

It is worthy of note that emulsion of normal mouse brain produced a reaction of greater than 6 mm. in a certain percentage of cases. The reaction was stronger in persons with lymphogranuloma venereum than in normal persons, especially during the first two days. In the majority of cases the area of reaction was less than 7.5 mm.

A small percentage of persons with lymphogranuloma venereum gave a reaction slightly less than 6 mm. in diameter to mouse brain antigen. Several of these were patients whose disease was in an early stage, who later gave stronger reactions.

OPTIMUM DAY FOR READING TEST

The greatest percentage of patients with lymphogranuloma venereum have strong reactions to mouse brain antigen on the fourth and the fifth day; the smallest number of mild reactions to the antigen occur after the fourth day. Also, the patients show the greatest percentage of mild reactions to emulsion of normal mouse brain on the third and the fourth day. On the sixth day the percentage of patients showing strong reactions to mouse brain antigen decreases sharply, and there is a sharp increase in strong reactions to emulsion of normal mouse brain on this day. This is, no doubt, a nonspecific effect and complicates readings after the fifth day.

Control subjects have the greatest percentage of mild reactions to mouse brain antigen and to emulsion of normal mouse brain after the fourth day.

Taking all these factors into consideration, we deduce that the optimum time for reading the test is between the third and the fifth day, preferably on the fourth day. On this day there are the greatest number of expected reactions and the smallest number of false reactions.

COMPARISON BETWEEN REACTIONS TO MOUSE BRAIN ANTIGEN AND EMULSION OF NORMAL MOUSE BRAIN IN THE SAME PERSON

In a comparison of the reactions of patients with lymphogranuloma venereum and of normal persons to mouse brain antigen and its control, the figures used were those of readings on the fourth day. An analysis of these is shown in table 2.

TABLE 2.—*Analysis of Reactions to Mouse Brain Antigen and Its Control in the Same Person*

No. of Subjects Reacting to Mouse Brain Antigen in Each Group	Corresponding Reaction to Emulsion of Normal Mouse Brain	Comment
	A. Patients with Lymphogranuloma Venereum (87)	
Group 1 (0-5.5 mm.) 5 subjects	Less than 3 mm.	One subject had a reaction to mouse brain antigen under 3 mm.; the rest, between 3 and 5.5 mm. (in some the disease was in an early stage and later the reaction was stronger); all reactions have to be considered negative
Group 2 (6-7.5 mm.) 23 subjects	22, less than 3 mm.; 1, between 3 and 5.5 mm.	One has to be considered doubtful because the reaction to emulsion of normal mouse brain was more marked than in the majority; there was enough difference between the reaction to mouse brain antigen and to its control in the remainder to justify considering the former reaction positive
Group 3 (8 mm. and over) 59 subjects	50, less than 5.5 mm.; 8, between 6 and 7.5 mm.; 1, more than 8 mm.	Three reactions have to be considered negative because the reaction to the control was almost as strong as that to mouse brain antigen; in the remainder of cases there was sufficient difference to warrant considering the reaction to antigen positive
	B. Control Subjects (158)	
Group 1 (0-5.5 mm.) 137 subjects	122, under 3 mm.; 14, between 3 and 5.5 mm.; 1, between 6 and 7.5 mm.	One hundred subjects had a reaction to mouse brain antigen under 3 mm.; the remainder, a reaction between 3 and 5.5 mm.; all reactions have to be considered negative
Group 2 (6-7.5 mm.) 15 subjects	7, less than 3 mm.; 3, between 3 and 5.5 mm.; 5, between 6 and 7.5 mm.	Seven reactions have to be considered positive because the reaction to emulsion of normal mouse brain was under 3 mm.; 3 reactions were doubtful and 5 negative because the reaction to the control was almost or equally as large as that to the antigen
Group 3 (8 mm. and over) 6 subjects	2, less than 5.5 mm.; 2, between 6 and 7.5 mm.; 2, more than 8 mm.	Two reactions have to be considered positive because the reaction to emulsion of normal mouse brain was under 5.5 mm.; the remainder have to be considered negative because the reaction to the control was almost or equally as large or larger than that to the antigen

Of the 87 patients with lymphogranuloma venereum, 86 gave greater reactions to mouse brain antigen than to emulsion of normal mouse brain. The remaining patient had equal reactions to both. However, only 78 of the patients with lymphogranuloma venereum showed a positive reaction, the reactions of the remainder being too small to be considered positive or only slightly larger than the corresponding controls. Of these, 1 has to be considered doubtful and 8 negative. Most of the negative reactions were in cases of early stages of involvement.

Of the 158 control subjects 117 gave equal reactions to mouse brain antigen and its control. In 1 case the reaction to both was more

than 15 mm. in diameter. This represents a state of hypersensitivity to mouse brain tissue and is a good illustration of the reason for always using emulsion of normal mouse brain as a control. In 38 cases the reaction to mouse brain antigen was greater than that to emulsion of normal mouse brain. In 9 it was large enough or sufficiently larger than that to the corresponding control to be considered a positive

TABLE 3.—*Analysis of Reactions of Patients with Lymphogranuloma Venereum and of Control Subjects to Mouse Brain Antigen and to That Prepared from Pus of Human Patients*

No. of Tests	Mouse Brain Antigen		Antigen from Pus of Human Patients		Comments
	+	−	+	−	
	A. Patients with Lymphogranuloma Venereum, Inguinal Type (28)				
32 (4 repeats)	29	3	29	3	In 18 cases the reaction to the antigens were equal; that to mouse brain antigen was stronger in 7 cases and weaker in 3 cases; in 2 cases the reactions to both antigens were negative, as the disease was in the early stage; when the test was repeated, in 1 case there were a negative reaction to antigen prepared from pus of human patients and a positive reaction to mouse brain antigen and in the other case opposite results; a second repetition produced positive reactions to the two antigens in both cases
	B. Patients with Lymphogranuloma Venereum, Genitorectal Syndrome (12)				
12	12	0	12	0	In 6 cases the reactions to the antigens were equal; in the remainder that to mouse brain antigen was stronger
	C. Patients with Previous Buboes, and a Negative Reaction to the Ito-Reenstierna Test (6)				
6	6	0	5	1	In 3 cases the reaction to the antigens were equal; that to mouse brain antigen was stronger in 2 cases; in the remaining case there was a reaction of 5 mm. to antigen prepared from pus of human patients and one of 11 mm. to mouse brain antigen (reaction to emulsion or normal mouse brain, only 2 mm.)
	D. Control Subjects (74)				
74	4	70	4	70	The 4 subjects who gave positive reactions to both antigens gave a negative one to emulsion of normal mouse brain; there were no clinical signs of lymphogranuloma venereum and no history of previous buboes

reaction; in 3 the difference made the result doubtful. In 3 control cases the reaction to normal mouse brain was larger than that to the corresponding mouse brain antigen. To summarize, 146 of the normal subjects had negative reactions, 9 positive and 3 doubtful.

COMPARISON OF REACTIONS TO MOUSE BRAIN ANTIGEN AND THOSE TO ANTIGEN PREPARED FROM PUS OF HUMAN PATIENTS

With the same criteria the reaction to 0.1 cc. of antigen prepared from the pus of human patients was compared with that to the same amount of mouse brain antigen. An analysis of the reactions of patients with lymphogranuloma venereum, divided according to (1) inguinal type, (2) genitorectal syndrome and (3) history of previous

bubo and a negative reaction to the Ito-Reenstierna test, and of normal persons is shown in table 3.

In the main, the antigen prepared from the pus of human patients and mouse brain antigen gave corresponding results in the various groups. Exceptions are noted in the column headed "Comment" in table 3. The 4 apparently normal persons who gave positive reactions to both antigen prepared from the pus of human patients and mouse brain antigen may have been previously infected with lymphogranuloma venereum, although no history of such infection could be obtained. A similar observation has been made previously by Bejarano and Gallego Calataynd.[13]

Mouse brain antigen is better than that prepared from the pus of human patients because of the greater availability and uniformity. Use of the latter antigen requires a large service and subjects available for determination of its potency and is therefore unsuitable for use by the practitioner, unless it has been previously tested. It follows that the supply is limited.

SUMMARY

For 116 patients with lymphogranuloma venereum and 204 control subjects 398 tests were made with mouse brain antigen, 398 with emulsion of normal mouse brain and 124 with antigen prepared from pus of human patients.

Criteria are offered for interpretation of the test with mouse brain antigen.

Of patients with lymphogranuloma venereum, 90 per cent gave positive, 9 per cent negative and 1 per cent doubtful reactions to mouse brain antigen. Most patients giving a negative reaction had the disease in an early stage and later gave a positive reaction.

Of the control subjects 93 per cent gave negative, 5 per cent positive and 2 per cent doubtful reactions to mouse brain antigen.

One per cent of persons tested showed a strong hypersensitivity to mouse brain tissue, the reaction to emulsion of normal mouse brain and to mouse brain antigen remaining intense for more than a week.

CONCLUSIONS

1. The optimum time to read the result of the Frei test is between the third and the fifth day, preferably the fourth day.

2. A reaction to mouse brain antigen on the fourth day consisting of a papule more than 6 mm. in diameter accompanied with a much less intense reaction to emulsion of normal mouse brain may be considered

13. Bejarano, J., and Gallego Calataynd, S.: Las formas inaparentes de la linfogranulomatosis inguinal subaguda, Actas dermo-sif. **26**:265 (Jan.) 1934.

positive. The reaction should remain this size or become larger for at least one week.

3. There is usually a reaction to mouse brain antigen and to emulsion of normal mouse brain during the first two days, which then disappears. This is a nonspecific reaction.

4. In the interpretation of borderline reactions (6 to 7.5 mm.) to mouse brain antigen, the size of the corresponding reaction to emulsion of normal mouse brain should be taken into consideration. A small percentage of reactions are doubtful and cannot be interpreted. The test should be repeated in cases in which such a reaction appears.

5. Comparison of mouse brain antigen with that prepared from the pus of human patients shows that both give approximately equal reactions.

6. Mouse brain antigen is suitable for use in the diagnosis of lymphogranuloma venereum when the reaction to it is properly interpreted.

Dr. Louis Tulipan supervised the work reported here, and Dr. William Director read the manuscript.

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MYCOSIS FUNGOIDES IN MOTHER AND IN DAUGHTER

FURTHER REPORT

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Several years ago Cameron [1] reported studies from this clinic in 2 cases of mycosis fungoides, in a mother and a daughter. The mother had already died, and her complete record was presented, but the daughter was still living. Since Cameron's publication the daughter has died, and additional data concerning the course of her illness and the observations at autopsy are presented herein.

REPORT OF CASE

Mrs. M. M., a housewife aged 28, first came to the clinic as a patient on May 21, 1931. She had been seen six years previously by Dr. Wile, at the time of one of her mother's visits to the office, when she presented a typical infiltrated plaque of mycosis fungoides on the inner aspect of her left thigh. Mrs. M. M. had been seen again as a private patient by Dr. Wile about one year before she came to the hospital, and at that time she had a generalized eczematous eruption; the infiltrated plaque was still present on the thigh. When first seen in the clinic she complained of severe generalized pruritus, which had been present for seven years.

(In the report by Cameron, data up to 1933 were presented; these have been omitted from this article.)

During the next four years the patient was seen at the University Hospital only four times; once over a period of two weeks she received nine superficial roentgen treatments of 75 r each to various fields over the entire body; the remainder of the visits were short and consisted essentially of check-up examinations.

On Feb. 9, 1937, she returned for treatment, and at that time her cutaneous involvement had again become universal, being characterized by thickening and dull erythema. There were many scattered plaques, varying from the size of a dime to that of a palm; most of these had a crusting scale. Generalized adenopathy, especially in the groins and axillas, was present. About that time the patient was

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Studies and contributions from the Department of Dermatology and Syphilology, University of Michigan Medical School, service of Dr. Udo J. Wile.

1. Cameron, O. J.: Mycosis Fungoides in Mother and in Daughter, Arch. Dermat. & Syph. **27**:232 (Feb.) 1933.

presented before the Chicago Dermatological Society,[2] and at the suggestion of that group she was started on a regimen including oral administration of chaulmoogra oil in a dose of 5 minims (0.31 cc.) three times daily. From that time on the patient spent periods of only a few days to a week at home; the remainder of the time she was in the hospital.

The patient returned on March 11, 1937, with edema of the extremities and vesiculation of the palms and soles. The vesiculation became more widespread, involving the face and neck. As her general physical condition improved the number of vesicles decreased. She again received superficial roentgen therapy in doses of 75 r, to all areas of the body. There was apparent relief from symptoms. The remission proved to be brief, and on April 14, 1937, she presented a severe exacerbation of all of her cutaneous lesions; bullae developed and broke readily, leaving a denuded weeping surface.

About this time it was noted that a generalized brownish black pigmentation and definite infiltration of all the skin were developing. These persisted although the general physical condition again improved. Severe pruritus soon recurred, and nervousness became marked. The pigmentation continued to increase, the trunk and extremities becoming almost black. The infiltration in the interscapular area, on the forearms and in some of the old plaques on the side of the trunk increased steadily, as did generalized thickening of the skin. Painful enlargement of the lymph glands, particularly the epitrochlear and the axillary, appeared at this time. Superficial vesiculation of the hands, arms and feet recurred and continued to do so in crops for several weeks. Histologic examination of the skin showed characteristics of irradiated lymphoblastoma cutis.

In August 1937, after a short remission of her symptoms, the patient returned, complaining of discomfort, lack of sleep and fissuring of the skin in the natural creases about the groins, abdomen and neck. Greatly infiltrated plaques were still present, particularly on the posterior parts of both thighs. About this time, while on a short visit to her home, the patient experienced a sudden attack of convulsive seizures, accompanied with disorientation, dysarthria and hyperkinesia; this was of short duration, less than twenty-four hours. It was deemed advisable to give some more superficial roentgen therapy for the pruritus, which had again become intolerable; a complete course of treatments was given to the whole body, and this was followed by some relief. Further, it was noted that the generalized hyperpigmentation of the skin was becoming less. Rather suddenly the patient had another convulsive attack, which was like the first seizures mentioned, lasted less than a day and left her in the same physical condition as before.

Many careful blood counts were performed during the course of the illness. Most of these gave essentially normal results except for slight anemia and mild eosinophilia, as on Dec. 8, 1931, when a count revealed 66.5 per cent hemoglobin, 3,690,000 erythrocytes and 6,200 leukocytes with a differential count showing 72 per cent neutrophils, no basophils, 6 per cent eosinophils, 6 per cent large lymphocytes, 12 per cent small lymphocytes and 4 per cent monocytes. The blood showed no leukemia until the last year, when, on April 23, 1937, a blood count showed 65 per cent hemoglobin, 3,970,000 erythrocytes, and 23,000 leukocytes, with a differential count of 47 per cent neutrophils, no basophils, 10 per cent eosinophils, 36 per cent large lymphocytes, no small lymphocytes and 7 per cent monocytes. The blood picture subsided to normal except for the anemia and eosinophilia after superficial roentgen therapy was given and remained so until November 1937, at which time the blood count again became abnormal, showing 68 per cent hemoglobin,

2. Wile, U. J.: Mycosis Fungoides, Arch. Dermat. & Syph. **36**:900 (Oct.) 1937.

3,680,000 erythrocytes and 19,500 leukocytes with a differential count of 53 per cent neutrophils, no basophils, 10 per cent eosinophils, 20 per cent large lymphocytes, no small lymphocytes and 5 per cent monocytes. This blood picture persisted throughout the rest of the illness. Histologic changes progressed from those compatible with an early stage of lymphoblastoma cutis, as aforementioned; through marked hyperplasia of the epidermis, proliferation of the stroma in the subpapillary and papillary layers of the corium and reticuloendothelial perivascular proliferation, with a diagnosis of irradiated lymphoblastoma cutis, to nodular perivascular reticuloendothelial proliferation and endothelial hyperplasia of the newformed blood vessels, with a diagnosis of lymphoblastoma cutis.

Elevations in temperature occurred from time to time, and in the latter part of October 1937 it was noted that almost daily elevation, sometimes as high as 102 F. occurred. This elevation persisted throughout the rest of the illness and for short periods was even higher. The patient's general condition changed little until December 1937, when large abscesses started to develop at the sites of some of the enlarged lymph glands.

Shortly after this, in January 1938, bronchopneumonia with pleural effusion began to develop. At this time, almost a year after generalized thickening of the skin had become evident, fading of the pigment and decrease in infiltration of the skin were obvious. Desquamation and pruritus increased, while the skin assumed a velvety texture. This proved to be the final turning point, for the course was steadily downhill after this change was noted. She died on Feb. 24, 1938, six years and nine months after she was first seen at the University Hospital.

Observations at Necropsy.—The periaortic lymph nodes and the mediastinal nodes showed advanced lymphoblastomatous change. Neoplastic lymphoid infiltrations were noted in the mediastinal fat and connective tissue. The aorta showed moderate atherosclerosis.

Scattered lymphoblastomatous infiltrations were present in the lungs, particularly beneath the pleura, some as large as 1 cm. in diameter. In some areas there was diffuse atelectasis. Acute fibrinopurulent confluent lobular pneumonia was present.

The bronchi showed acute purulent inflammation and neoplastic infiltrations. There was lymphoblastomatous transformation of the bronchial and infrapulmonic nodes through the capsules into the mediastinum. In these areas there were also numerous eosinophils. Encapsulated fibrocalcareous tuberculosis was present in these nodes.

The diaphragm presented serosal adhesions and lymphoblastoma. Extensive lymphoblastomatous change was present in the spleen and also involved the capsule and the adjacent tissues. Acute exacerbation of a chronic passive congestion was present. There were embolic purulent arteritis and small regions of necrosis, some with abscess formation.

In the liver there was lymphoblastomatous infiltration in the portal areas, with slight proliferation of the bile ducts, and cloudy swelling with acute exacerbation of chronic passive congestion.

The skin revealed lymphoblastoma cutis. There were marked lymphoid infiltrations about blood vessels and accessory cutaneous structures in the subpapillary layer of the corium. In the cutis there were extensive accumulations of histiocytes, containing granules of brown pigment.

After decalcification a rib, a vertebral body and the sternum revealed small disseminated foci of neoplastic proliferation, along with highly cellular congested marrow containing huge numbers of eosinophils, myelocytes and mature eosinophils. Marrow from the right femur did not require decalcification, but resembled that elsewhere in being highly cellular and hyperplastic, with eosinophils predominant.

Tissue from the axilla and the groin showed chronic ulcer and severe underlying purulent inflammation in regions of extensive lymphoblastomatous infiltration.

The cells of the neoplasm were of undifferentiated lymphoid type. Some of the lymph nodes which had already undergone extensive lymphoblastomatous transformation showed little destruction of the usual architecture. An unusual characteristic of the neoplasm was its association with extensive infiltration of eosinophils and an extensive eosinophilic process in the bone marrow.

COMMENT

In spite of the development of characteristic prefungoid infiltrated plaques from time to time, the second patient never had any large fungating tumors of mycosis fungoides as the first one did. However, a few small nontender elevations appeared on the shoulders and legs; these were never more than 5 to 7 mm. in diameter. The manifestations in the 2 cases were similar otherwise, particularly in the following features:

1. There was a prolonged period of marked pruritus and exfoliative erythroderma prior to the development of the infiltrated plaques.
2. The histologic changes were compatible with mycosis fungoides.
3. The lesions responded to roentgen therapy for a time.

MAPHARSEN IN TREATMENT OF CONGENITAL SYPHILIS

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Mapharsen is a trivalent arsenical preparation the percentage of arsenic in which is approximately the same as that in the arsphenamines. However, the effective therapeutic dosage is about one tenth that of the arsphenamines, and therefore much less arsenic is required.

The qualities of mapharsen were studied for several years by Tatum and Cooper,[1] who found that its therapeutic index and other properties made the drug more promising than any other single antisyphilitic agent known to them.

The first report on the use of this drug in antisyphilitic therapy for human beings was made by Foerster [2] at the meeting of the American Dermatological Association in 1933.

Further reports by other investigators followed. All agreed that mapharsen is relatively less toxic than neoarsphenamine. Most of the investigators concurred in the opinion that mapharsen is a good antisyphilitic remedy. There has been some disagreement, however, as to the kind of disease suitable for treatment with mapharsen. While some investigators [3] have expressed a preference for its use in cases of latent syphilis, others [4] have found it just as useful in cases of early syphilis and have expressed the belief that it is as potent a remedy as neoarsphenamine.

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1. Tatum, A. L., and Cooper, G. A.: An Experimental Study of Mapharsen as an Antisyphilitic Agent, J. Pharmacol. & Exper. Therap. **50**:198, 1934.

2. Foerster, O. H.; McIntosh, R. L.; Wieder, L. M.; Foerster, H. R., and Cooper, G. A.: Mapharsen in the Treatment of Syphilis: A Preliminary Report, Arch. Dermat. & Syph. **32**:868 (Dec.) 1935.

3. Astrachan, G., and Wise, F.: Further Experiences with Mapharsen: Its Use in Latent Syphilis, Am. J. Syph., Gonor. & Ven. Dis. **22**:470, 1938.

4. (*a*) Foerster, O. H.: Personal communication to the authors. (*b*) Parsons, R. P.: Mapharsen in the Treatment of Early Syphilis, U. S. Nav. M. Bull. **35**:207, 1937. (*c*) Wieder, L. M.; Foerster, O. H., and Foerster, H. R.: Mapharsen in the Treatment of Syphilis: Further Experiences, Arch. Dermat. & Syph. **35**:402 (March) 1937.

In a recent article published by Astrachan,[5] dealing with a group of 24 cases of congenital syphilis, an opinion was expressed that mapharsen is especially useful against late congenital syphilis. Satisfactory results in congenital syphilis were reported by Wile.[6] In order to confirm or disprove this conception we studied the serologic and clinical effects of mapharsen in 42 cases of congenital syphilis. Among these were 15 which were included in the first investigation and in which treatment with mapharsen was continued.

At first we treated only late congenital syphilis, administering the injections intravenously. Later, at the suggestion of Rosen,[7] we began to use mapharsen for early congenital syphilis, giving the injections intramuscularly. There were 18 boys and 24 girls; the maximum age was 11 years and the minimum age 2 months. There were 11 cases of early and 31 cases of late congenital syphilis.

The total number of injections given was eight hundred and eighty-three. The largest number of injections given in a single case was seventy-six; the smallest number was four. The injections of mapharsen were given once a week, accompanied with or followed by injections of a bismuth preparation. Almost all of our patients had a complete blood count (including a determination of platelets) during a course of injections of mapharsen or after it was completed. In many cases tests of hepatic function were made.

EFFECTS OF MAPHARSEN THERAPY

1. *Untoward Reactions.*—There has been almost perfect unanimity among investigators that mapharsen is less toxic than neoarsphenamine. They all have stressed the absence of nitritoid reactions (only 1 case[8] reported). The number of reported cases of exfoliative dermatitis is small. Not a single case of encephalitis haemorrhagica nor one of death has been reported to date.

Among our 42 cases, in only 3 was there any kind of after-effect following mapharsen therapy: One patient vomited and felt dizzy after the injection. The dosage of mapharsen was reduced the next week and the patient made no further complaint. Another patient had a temperature of 104 F. after an injection of mapharsen. After one month administration of the drug was renewed (dose decreased), and the patient tolerated it well, without any after-effects. A third patient presented mild albuminuria with hyaline casts. The urine improved after anti-

5. Astrachan, G.: Mapharsen in Antisyphilitic Therapy, Am. J. Syph., Gonor. & Ven. Dis. **21**:81, 1937.

6. Wile, U. J., in discussion on Foerster and others.[2]

7. Rosen, I., in discussion on Astrachan.[5]

8. Swartz, J. H., in discussion on Wieder, Foerster and Foerster,[4c] Arch. Dermat. & Syph. **35**:599 (April) 1937.

syphilitic therapy was interrupted for a short time. All the other patients tolerated mapharsen well and did not present any after-effects.

The ratio of immediate reactions to the total number of injections was 1:883. The ratio of delayed reactions to the total number of injections was 2:883, or 1:441. These figures are much lower than those reported in a previous investigation of latent syphilis,[3] in which the respective ratios were 1:125 and 1:167.5.

The decreased frequency of untoward reactions in our present investigation may be explained by the fact that children stand injections of any arsenical much better than adults.

2. *Local Complications.*—In a previous investigation by one of us,[5] it was mentioned that several patients complained of pain or a burning sensation in the arm immediately after the injection of mapharsen. A few of the patients have shown signs of endophlebitis in the arm. None of the patients in our present investigation made any complaints, nor did they show any signs of local reaction after the injections. It is also worth mentioning that the patients with early congenital syphilis who received the injections of mapharsen intramuscularly did not show any signs of general discomfort (fever or restlessness) or any local reaction (necrosis) at the site of the injection.

3. *Effect on Visible Lesions.*—Two patients presented typical symptoms of interstitial keratitis. One of these, whose condition did not respond well to bismuth therapy, experienced great improvement under treatment with mapharsen. In the other the keratitis cleared almost completely after three months' treatment with mapharsen and a bismuth preparation. The cutaneous manifestations in our cases of early congenital syphilis cleared completely in twenty-one days (average).

4. *Serologic Effect.*—(*a*) In Late Congenital Syphilis: Thirty-one patients were treated. They received on the average twenty-three injections of mapharsen (the doses ranging from 3 to 25 mg.). Among these were 6 patients whose serologic reactions remained unchanged regardless of therapy with neoarsphenamine (average number of injections, 26) and with a bismuth preparation. In all these cases the serologic reaction was reversed partially or completely after an average of thirty-three injections of mapharsen was given.

Of 31 patients, 16, or 50.1 per cent, had a completely negative reaction or showed partial improvement in their serologic reaction after an average of thirty-four injections of mapharsen were administered (in most cases concurrently with bismuth medication). Of these 16, 8 had a completely negative reaction after thirty-four injections of mapharsen were given.

(*b*) In Early Congenital Syphilis: Eleven patients were observed. Among these 1 died of an intercurrent disease; another was discharged

from the hospital before the effect of mapharsen therapy could be ascertained. The remaining 9 were treated with concurrent administration of a bismuth preparation and mapharsen, and 4 had a completely negative Wassermann reaction after an average of eleven injections were given. For the 5 remaining patients the Wassermann reaction remained strongly positive after an average of fourteen injections were given. The dose of mapharsen used in the treatment of early congenital syphilis was 0.5 mg. to every kilogram of weight. However, because of the novelty of the experiment with intramuscular injection of mapharsen and the uncertainty about its toxicity in infants, we began treatment with a small dose and gradually increased it (0.5 mg. each week) until the proper dose was reached.

The average dose of mapharsen in the cases of early congenital syphilis was, as one can see from the table, very small (2.5 mg.). The injections of mapharsen were accompanied with concurrent administration of injections of bismuth subsalicylate.

Serologic Effect of Mapharsen Therapy

	Number of Cases	Number of Injections of Mapharsen Given	Average Dose, Mg.	Number of Cases in Which the Serologic Reaction Reversed Partly or Completely
Late congenital syphilis.....	31	24	13	16 (50.1%)
Early congenital syphilis.....	9	12	2.5	4 (44.4%)

5. *Examination of Spinal Fluid.*—Spinal puncture was performed in 37 cases. The results of examination of the fluid were negative except in 3 cases, in which the Wassermann test and the colloidal gold curve were found to be positive. The Wassermann test of the blood in these 3 cases remained strongly positive despite vigorous antisyphilitic therapy with mapharsen (average number of injections, twenty-nine) and with a bismuth preparation. This factor proves again that mapharsen therapy does not influence the serologic reaction in cases of cerebrospinal syphilis.

6. *Platelet Count.*—Blood counts were performed in almost every one of our cases. In the majority of cases there was no change in the blood count after mapharsen therapy. In 9 cases, however, the platelet count showed a definite decrease (average count, 130,000) after 10 or 15 injections of mapharsen were given. (In 2 of these cases the platelet count became normal soon after mapharsen therapy was discontinued.) In 7 cases the platelet count increased gradually and returned to normal during further mapharsen therapy.

The beneficial effect of mapharsen on the platelet count in some cases was shown in a previous investigation.[3] In only 2 cases mapharsen had to be discontinued temporarily, in order to bring the platelet count to

normal. In the cases in which the platelet count was decreased as a result of mapharsen therapy, the patient felt well and did not complain or show signs of any after-effects.

This compares favorably with the figures on changes in platelet count in latent syphilis treated with mapharsen.[3] In that stage the decrease in platelet count was accompanied with other untoward reactions, like purpura or dermatitis. This factor proves again that mapharsen is a great deal less toxic in children than in adults.

COMMENT

The low toxicity of mapharsen, which has been stressed by almost all investigators, is definitely confirmed by our present investigation. The small number of cases in which reactions (delayed or immediate) followed mapharsen therapy and the small ratio of these reactions to the total number of injections given prove that the toxicity of the drug is low in children.

As for the effect of mapharsen therapy on the serologic reactions in late congenital syphilis, there was improvement in more than 50 per cent of our cases as a result of the treatment. This percentage is a fairly good one in cases of late congenital syphilis, in which biologic cure is difficult to obtain and in not less than 50 per cent of instances there is a fixed serologic reaction, regardless of the treatment given.[9] It is also worth mentioning that several of our patients who did not respond to neoarsphenamine therapy improved greatly under the influence of injections of mapharsen. All this makes us feel that mapharsen is a useful drug in late congenital syphilis.

In weighing the kind of arsenical preparation to use in the treatment of early congenital syphilis it must be remembered that a complete cure is not only desirable but possible, if the proper therapy is administered; on the other hand, the organism of the infant is in a weakened condition from its lowered resistance, malnutrition and toxemia due to spirochetosis. Because of all this, in the choice of the proper arsenical preparation therapeutic efficacy and toxicity have to be considered.

Mapharsen caused complete reversal of the serologic reactions in 44.4 per cent of our cases after only twelve injections were given (concurrently with bismuth medication). This is a good therapeutic effect if the exceptionally small dose of mapharsen (2.5 mg. average dose) is taken into consideration. We feel, however, that the small number of

9. Moore, J. E.: The Modern Treatment of Syphilis, Springfield, Ill., Charles C. Thomas, Publisher, 1933. Cole, H. N.; Usilton, L. J.; Moore, J. E.; O'Leary, P. A.; Stokes, J. H.; Wile, U. J.; Parran, T., Jr., and Vonderlehr, R. A.: Late Prenatal Syphilis, with Special Reference to Interstitial Keratitis: Its Prevention and Treatment, Arch. Dermat. & Syph. **35**:563 (April) 1937.

cases dealt with does not give us the right to make any definite statements about the advisability of using mapharsen in early congenital syphilis. It seems, however, that in view of the low toxicity and visible efficacy of mapharsen, this drug should be experimented with further (with larger doses) in cases of early congenital syphilis.

CONCLUSIONS

1. Mapharsen shows little toxicity in children.

2. Mapharsen is useful for treatment of late congenital syphilis.

3. Mapharsen (given intramuscularly) proved useful in our limited number of cases of early congenital syphilis.

4. Further experimentation with larger doses of this drug in many cases is necessary before any definite conclusion may be reached about the use of mapharsen in early congenital syphilis.

Miss Florence Ramsden looked up the records on which this report is based.

Clinical Notes

NITRITOID REACTION FOLLOWING AN INJECTION OF TRYPARSAMIDE

GIRSCH DAVID ASTRACHAN, M.D., AND ANDREW G. FRANKS, M.D., NEW YORK

Consulting the literature on nitritoid reactions, we found only 2 bona fide cases of reaction occurring after the use of tryparsamide. One was described by O'Leary and Becker.[1] The other was reported by Silverstein.[2] In view of the great rarity of nitritoid crisis after administration of tryparsamide [3] and the possible although rare danger of nitritoid crisis in general,[3a] the following case under our observation might be of interest:

REPORT OF A CASE

Mrs. C. C., an Italian aged 32, born in the United States, was treated at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital for cerebrospinal syphilis. She received ninety injections of tryparsamide (1 to 2.5 Gm.) without any ill effect. She also tolerated injections of neoarsphenamine and a bismuth preparation well. On Feb. 11, 1937, the patient reported, in answer to the routine questioning as to her condition after the previous week's injection of tryparsamide (2 Gm.), that she felt nauseated for a while and noticed a mild swelling and redness of the face, which lasted for a few minutes. In view of this occurrence, the dose of tryparsamide was reduced to 1 Gm. and the patient was observed carefully while the injection was being given. As soon as the tryparsamide was administered, she began to complain of a tickling sensation in the throat, nausea and pain in the stomach. Three minutes later, when she got up, her conjunctivas became suffused, and a diffuse redness spread over the face and neck. Intense coughing followed, and the patient complained of a choking sensation in the throat, heaviness ("feeling of paralysis") on her chest, a feeling of swelling of the face and a burning sensation in the eyes. She was alarmed for a while. All these symptoms disappeared in fifteen minutes. Tryparsamide was then discontinued and renewed seven months later, after a prophylactic course

From the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, Columbia University, George Miller MacKee, M.D., Director; service of Fred Wise, M.D.

1. O'Leary, P., and Becker, S.: Further Observations on the Treatment of Neurosyphilis with Tryparsamide, M. J. & Rec. **12**:305, 1936.

2. Silverstein, J. D.: Tryparsamide in Neurosyphilis, Lancet **2**:693, 1926.

3. Moore, J. E.: The Modern Treatment of Syphilis, Springfield, Ill., Charles C. Thomas, Publisher, 1933. Stokes, J. H.: Modern Clinical Syphilology, ed. 2, Philadelphia, W. B. Saunders Company, 1934.

3a. Gjessing, H.: Acta dermat.-venereol. **15**:59, 1934. Sézary, A.; Friedman, E., and Chauvillon, P.: Crise nitritoïde mortelle, Bull. Soc. franç. de dermat. & syph. **42**:1429, 1935.

of injections of liver extract.[4] Injections of 0.5 and of 1 Gm. of tryparsamide were then borne well, but when 1.25 Gm. was administered the patient complained of sudden weakness and nausea and presented redness, edema of the face and mild conjunctivitis. A few minutes later a localized urticaria-like eruption developed and was soon followed by diffuse erythema of the whole body; this eruption disappeared in one or two days, and the patient felt perfectly well after that. The tryparsamide was then discontinued permanently.

SUMMARY

A case of nitritoid crisis after an injection of 1 Gm. of tryparsamide is described. The crisis recurred seven months later, after an injection of 1.25 Gm. of the same drug, and was followed immediately by a diffuse erythema of the whole body, lasting one or two days.

237 East Twentieth Street.

313 East Seventeenth Street.

4. Astrachan, G., and Sharp, E.: The Value of Liver Extract in Cases Intolerant to Arsenicals, to be published.

Minor Notes

ROUTINE PATCH TESTS

HERMAN SHARLIT, M.D., NEW YORK

Making patch tests to seek out the causative agent of contact dermatitis is now a commonplace procedure. Unfortunately, however, it is increasingly evident that the practice is not without hazard. In the presence of dermatitis venenata, not only may one expect to induce a "flare-up" at the sites of the eruption by patch tests with the responsible irritant or allergen, but none too rarely a generalized dissemination may result.

A distressing episode of the latter type in the case of a worker sensitive to dyes for furs has impelled me to raise the question of the justifiability of making patch tests during the acute or the subacute stage of dermatitis. Most surely this practice must be removed from the category of the routine, and in cases of industrial dermatoses the frequent requests of carrier companies for repetition of patch tests by their own consultants should be acceded to with caution.

32 East Sixty-Fourth Street.

Editorial

JUBILEE NUMBER OF THE BRITISH JOURNAL OF DERMATOLOGY

The *British Journal of Dermatology* was founded fifty years ago. Nineteen hundred and thirty-eight was its jubilee year, and in commemoration of the occasion the journal appropriately devoted its October number to a review of British dermatology during the period. It is a highly interesting and impressive review to men like myself, who have been strongly influenced by British dermatology.

I have always liked to feel that I belong to the British school of dermatology. I do not know how much importance to attach to our common language of Shakespeare and the King James version, our common Anglo-Saxon heritage, and all that sort of thing, but the English and Scotch way of seeing the specialty has appealed to me. The practical common sense, the capacity not only to observe but to generalize, the ability to put the emphasis on the main point and appraise values in the complexity of detailed parts, to hold to the main point—these qualities are appealing. I have liked the way of looking at the skin as a part of the whole organism, not as its principal structure. I have even had some sympathy with the old English system of taking men of wide experience in general medicine and throwing them into the maze of dermatology and letting them find their way out. I have seen in my ancient experience in London hospital clinics some excellent clinicians, recently assigned to skin services, who were in considerable confusion about dermatologic details but who were not confused about what they were there for and were giving a good account of themselves in the care of their patients. The system produced McCall Anderson and Allan Jamieson, Erasmus Wilson, Tilbury and Colcott Fox, Jonathan Hutchinson and Radcliffe Crocker, to name only a few; maybe there was something in the system that we lose in our more intense attention to dermatologic minutiae.

But this is somewhat beside my task; I was asked to comment on the October number. Well, the survey is made by MacLeod, Sequeira and Graham-Little. Of course they have done a good job and, with their subject, are inspiring. MacLeod's paper is "The British Journal of Dermatology and Syphilis, 1888-1938, A Retrospect;" Sequeira's, "Looking Backward;" Graham-Little's, "Dermatologists of the Past Fifty Years." MacLeod is chiefly concerned with a review of the progress of dermatology as shown in the journal, and, as the journal has practically covered British dermatology, it is a well considered

summary of the progress of the last fifty years; Sequeira concerns himself primarily with therapeutic advancement; and Graham-Little gives fine vignettes of the notables of British dermatology. The three papers supplement each other extraordinarily well.

The whole issue is a delight. It covers the period in which British dermatology came into its adult vigor. Willan and Bateman, Erasmus Wilson, Tilbury Fox and McCall Anderson had plowed the ground. Then came to till it Colcott Fox, Crocker, Morris, Brooke, Pringle and their good company. They produced a school of dermatology which was catholic but had a distinct character of its own and has been upheld and carried forward nobly by the men, many of them still with us, whose work is recorded in this jubilee number.

For the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY I offer congratulations to the British journal and to British dermatology. The survey brings vividly to mind the vigor of British dermatology for the last fifty years and gives one a feeling of optimism for it in the next fifty.

W. A. P.

News and Comment

AMERICAN ACADEMY OF DERMATOLOGY AND SYPHILOLOGY

The first annual meeting of the American Board of Dermatology and Syphilology, held in St. Louis on November 14 and 15, was attended by 283 dermatologists. The educational program was confined to the first day and consisted of lectures and dermonstrations in the morning and afternoon and eight round table discussions following luncheons in separate rooms. The subjects and speakers for lectures were as follows:

"The Proper Set-Up and the Indications or Contraindications of Roentgen Rays and Radium in Dermatology," C. Guy Lane, Boston; "Leprosy," George W. McCoy, Washington, D. C. (by invitation); "Disseminated Lupus Erythematosus," George H. Belote, Ann Arbor, Mich.; "Precancerous Dermatoses," Anthony C. Cipollaro, New York; "Clinical Course of Acquired Syphilis, Early, Late and Latent: (*a*) Cutaneous; (*b*) Visceral; (*c*) Cardiovascular; (*d*) Neurosyphilis," Fred D. Weidman, Philadelphia; "Pathology, Gross and Microscopic, Hematology and Serology," Francis E. Senear, Chicago; "Congenital Syphilis—Clinical Course," Charles C. Dennie, Kansas City, Mo.; "Treatment—Early Active—Latent—Congenital and Neurosyphilis," Harold N. Cole, Cleveland; "Treatment of Dermatophytosis," George M. Lewis, New York; "Dermatitis Medicamentosa," E. William Abramowitz, New York; "Histopathology of Cutaneous Cancer," Clark W. Finnerud, Chicago, and "Cutaneous Pharmaceutical Therapeutics," Karl G. Zwick, Cincinnati.

The subjects and speakers for the round table discussions were as follows:

"The Relation of Hormone Dysfunction to Acne," J. Gardner Hopkins, New York; "Uses and Limitations of Allergy in Dermatology," Samuel Peck, New York; "Classification of Cutaneous Tuberculosis," Henry E. Michelson, Minneapolis; "The Relationship of the Porphyrins to Light Sensitization," L. A. Brunsting, Rochester, Minn.; "Industrial Dermatoses," Harry E. Foerster, Milwaukee; "Pyoderma Gangraenosum," William H. Guy, Pittsburgh; "Scleroderma and Dermatomyositis," Paul A. O'Leary, Rochester, Minn., and "Sulfanilamide," Alexis F. Hartmann, St. Louis (by invitation).

A banquet was held on Monday evening and was attended by 250 members Excellent professional entertainment was supplied by the St. Louis Dermatologists, who also gave a cocktail party before the banquet. The president, Dr. Howard Fox, expressed great satisfaction at the success of the meeting and presented Dr. William Allen Pusey, who was the first to be chosen as an honorary member. Dr. Pusey was accorded a fine ovation. No formal speeches were made.

On the morning of November 15 a clinic was held at the Washington University School of Medicine. Groups of members were transported from the Hotel Jefferson to the hospital in busses which ran according to an exact schedule. Each member desiring to attend the clinic received a card stating the time at which he was to take the bus. At the clinic the members were required to go from one room to another in a prescribed direction. The apparent ease with which the 43 patients were observed by over 280 physicians was a tribute to the men who had made such careful plans for conducting the clinic.

An elaborate souvenir program constituted another unusual feature of the clinic. A loose-leaf book bound in heavy cardboard contained complete descriptions of 43 rare or interesting cases, accompanied by clinical photographs. Copies of this book were distributed a day before the clinic was held, at the time of registration.

After attending the clinic, members were given an opportunity to see demonstrations of the Kettering hypertherm; the electron microscope and the fluorescence microscope as well as demonstrations of microincineration and microspectography for investigation of mineral constituents of the skin.

Dr. Paul A. O'Leary, of Rochester, Minn., was elected president for the coming year, and Dr. Harther L. Keim, of Detroit, vice president. The following physicians were elected directors, to serve for three years: Dr. Paul E. Bechet, New York; Dr. Clyde L. Cummer, Cleveland; Dr. W. R. Jaffrey, Hamilton, Ontario, Canada; Dr. Harther L. Keim, Detroit, and Dr. Martin T. Van Studdiford, New Orleans. Others elected to honorary membership beside Dr. William Allen Pusey were Dr. Andrew P. Biddle, Detroit; Dr. William T. Corlett, Cleveland, and Dr. Charles J. White, Boston.

The next annual meeting will be held in Philadelphia, probably in October, and will last three days. No formal transactions of the recent meeting will be published. Each member, however, will receive a booklet containing a roster of the membership, a copy of the constitution and a program of the meeting.

The total membership to date consists of 542 fellows, 4 honorary members, 12 affiliates and 16 junior members.

Abstracts from Current Literature

EDITED BY DR. HERBERT RATTNER

TREATMENT OF SYPHILIS WITH HYPERPYREXIA, WITH OBSERVATIONS ON PROGNOSIS OF OPTIC ATROPHY. F. R. MENAGH, Am. J. Syph., Gonor. & Ven. Dis. **21**:609 (Nov.) 1937.

The author reports on the treatment of 99 syphilitic patients with both artificially induced fever and drugs. Of patients with neurosyphilis, including dementia paralytica, the tabetic form of dementia paralytica and tabes dorsalis, those with early involvement and minimal damage to tissue showed the best results from treatment. Trophic lesions in neurosyphilis are favorably influenced by this type of treatment.

Ocular syphilis, including atrophy of the optic nerve due to cellular infiltration, responds to fever therapy.

Artificial fever therapy is an important addition to the armamentarium for combating syphilis, particularly the more serious forms of the disease which do not respond to chemotherapy alone.

STUDIES IN CARDIOVASCULAR SYPHILIS: IV. INFLUENCE OF TREATMENT OF EARLY SYPHILIS UPON INCIDENCE OF CARDIOVASCULAR SYPHILIS. J. E. KEMP and K. D. COCHEMS, Am. J. Syph., Gonor. & Ven. Dis. **21**:625 (Nov.) 1937.

Among 743 patients who had received varying amounts of treatment for early syphilis, the incidence of cardiovascular syphilis varied from 0.7 per cent for patients infected for three years or less to 23.8 per cent for those infected for thirty years or more.

The incidence of cardiovascular syphilis among 249 patients who had received adequate treatment for early syphilis, 109 of whom were followed for ten years or more after its completion, was 0.4 per cent.

Among 214 patients who had received varying amounts of treatment for early syphilis, the incidence of cardiovascular syphilis was 1.4 per cent less than ten years after its completion.

Among 92 patients who had received little or no treatment for early syphilis, cardiovascular syphilis was twice as frequent (18.5 per cent) as among patients who had received more but nevertheless inadequate treatment for early syphilis (7.4 per cent).

This study, which included a sufficient number of patients to permit accurate deductions, shows that the adequate treatment of early syphilis completely protects the cardiovascular system.

USE OF DUCREY VACCINE IN DIAGNOSIS. A. D. DULANEY, Am. J. Syph., Gonor. & Ven. Dis. **21**:667 (Nov.) 1937.

A bacillary antigen of Haemophilus ducreyi was used for cutaneous tests in the diagnosis of chancroid. Allergy which develops in response to infection with H. ducreyi may be readily demonstrated by cutaneous tests, and such allergy is highly specific and persistent. Bacillary antigen is a more effective reagent than chancroidal pus. The high incidence of coexisting lymphogranuloma venereum and chancroidal infection necessitates a careful selection of material for antigens, especially for the Frei test.

TOXIC EFFECTS OF BISMUTH WITH ESPECIAL REFERENCE TO RENAL DAMAGE AND REPORT OF CASE OF ANURIA. A. C. EITZEN, Am. J. Syph., Gonor. & Ven. Dis. **21**:674 (Nov.) 1937.

The author reports severe renal damage with anuria following a single injection of a bismuth preparation (0.2 Gm. of thio-bismol) in a boy aged 8 years. There was a high degree of recovery, according to the various tests of renal function.

SUGGESTED SPECIFICATIONS FOR BISMUTH SUBSALICYLATE IN OIL. W. F. REINDOLLAR, Am. J. Syph., Gonor. & Ven. Dis. **21**:679 (Nov.) 1937.

A state of confusion bordering on chaos exists with regard to the official requirements for bismuth subsalicylate in oil and the method of expressing the concentration of bismuth on the label.

The author suggests the following specifications: Bismuth subsalicylate in oil shall contain 10 Gm. of finely ground U. S. P. bismuth subsalicylate in sufficient peanut oil to make 100 cc.

The label shall bear a statement of the kind of oil used. The concentration of bismuth salt shall be expressed as the quantity, in grams, of bismuth subsalicylate in 1 cc. of suspension.

REUTER, Milwaukee.

SPECIFIC HISTOLOGY OF GRANULOMA INGUINALE. E. R. PUND and R. B. GREENBLATT, Arch. Path. **23**:224 (Feb.) 1937.

The authors describe a pathognomonic cell which they observed in the tissue removed from patients with granuloma inguinale. With the tissue fixed in neutral 10 per cent solution of formaldehyde, embedded in paraffin and stained with hematoxylin and eosin, they were able to demonstrate this cell in every case of granuloma inguinale; it was not present in sections studied as controls. The pathognomonic cell varies from 25 to 90 microns in diameter and has a single eccentric nucleus and many intracytoplasmic cysts, which are filled with round or rodlike deeply stained bodies with an affinity for hematoxylin.

GLOMAL TUMORS. H. E. RADASCH, Arch. Path. **23**:615 (May) 1937.

The author reviews the previous reports of 90 cases of glomal tumor, 4 of them instances of multiple tumors. Four additional cases are reported, and a detailed description of the histologic structure of glomal tumor and of the normal glomus is given.

TIME FACTOR IN IRRADIATION OF MALIGNANT TUMORS. P. J. MELNICK and A. BACHEM, Arch. Path. **23**:757 (June) 1937.

Experiments were carried out on malignant tumors in rats to study the effect of roentgen irradiation in massive, fractional, subfractional and saturation doses. The following conclusions were drawn:

After irradiation sensitive tumor cells undergo primary degenerative changes. Refractory cells become altered in their chromosomal structure, resulting in abnormal forms which fail to survive. The effect of small divided doses of radiation is fully cumulative in producing changes in the nuclei. This form of therapy, therefore, offers the possibility of destroying a tumor by transforming its cells into abnormal forms, when the lethal massive dose is injurious to the host. For rapidly growing tumors, however, the saturation method is most efficient. An initial moderate massive dose destroys the sensitive cells, while subsequent divided doses destroy the refractory cells by the mechanism of altering their hereditary structure.

CARO, Chicago.

SYPHILIS LOOKS AT THE DOCTOR. N. A. NELSON, New England J. Med. **217**:971 (Dec. 16) 1937.

Nelson presents a general discussion of the problems syphilis offers the practicing physician. It is pointed out that the finding of the case and subsequent control of the patient are the important aspects of the treatment of syphilis from the standpoint of public health and are the responsibilities of the physician practicing clinical syphilology. Not only is it necessary for the practicing physician to make an early, accurate diagnosis of syphilis and to control the infection in the patient, but it is important for him to maintain treatment over an adequate period. Nelson recommends that the patient be taken completely into the physician's confidence and an explanation of the blood tests, the details of the treatment and the reactions given in some detail, in order to attain a higher degree of cooperation. The physician must consider himself a health officer and follow up possible contacts. The author expresses the belief that by maintaining the attitude of a public health officer while acting in the capacity of a private physician the practitioner will keep the official health agency farther from the private patient. He emphasizes the importance of routine examination during pregnancy.

EARLY DIAGNOSIS OF CARDIOVASCULAR SYPHILIS. P. D. WHITE and N. B. WISE, New England J. Med. **217**:988 (Dec. 16) 1937.

The term cardiovascular syphilis is essentially limited to syphilis of the aorta and the cerebral arteries. Early changes in the aorta consist of wrinkling and change of color of the inner surface. Later there is dilatation of the aorta, but because in most cases the early changes occur at the first portion, in the midst of the base of the heart, diagnosis at this stage is practically impossible. Generally, a positive diagnosis can be made only in cases of saccular aneurysm of the aorta or the innominate artery, of aortic regurgitation occurring for the first time in a middle-aged person with a positive serologic reaction or of diffusely dilated aorta without aortic regurgitation or hypertension past or present. Roentgen examination is indispensable. The statistics in 101 cases of syphilitic aortitis studied post mortem in the past twenty years at the Massachusetts General Hospital are presented; 86 of the patients were men and 15 women. The clinical diagnosis was correct for 49 per cent of the men and 33 per cent of the women. The only method of protecting the heart and the aorta from syphilis is the adequate early treatment of the disease.

APPEL, Boston.

MAPHARSEN IN TREATMENT OF CARDIOVASCULAR SYPHILIS. B. APPEL, New England J. Med. **217**:992 (Dec. 16) 1937.

One of the many difficulties encountered in the treatment of compensated cardiovascular syphilis is the tendency of the standard arsenical preparations to produce reactions involving the vascular system. The worst of these are the nitritoid reactions. Mapharsen is a preparation which apparently possesses minimal shocking effect on the vascular system. In addition to its antispirochetal action, it possesses the general tonic effect of arsenic, which is desirable in the treatment of the condition. Twenty-eight men with cardiovascular syphilis were treated with mapharsen; 6 had previously reacted unfavorably to neoarsphenamine but took mapharsen without reaction; 2 had slight nausea with both. None of the entire group studied had a nitritoid reaction; 21 had no reaction; jaundice and toxic hepatitis developed in 2, both of whom recovered and 1 was able to receive mapharsen mixed with a solution of decholin sodium while still jaundiced. The clinical response was satisfactory from the subjective point of view, most of the patients experiencing some improvement in dyspnea and a general tonic effect causing improvement in appetite and decrease in fatigability and in pain. There was no objective graphic evidence of improvement, because such changes take place so slowly that they can be demonstrated only with difficulty and after a long time. This report points out the promise that this drug may be a valuable agent against cardiovascular syphilis.

AUTHOR'S ABSTRACT.

PSYCHOLOGICAL FACTORS IN ASTHMA-PRURIGO. C. H. ROGERSON, Quart. J. Med. **6**:367 (Oct.) 1937.

Rogerson describes his findings in a group of 30 children ranging in age from 3 to 15 years in whom the asthma-prurigo personality was present. He confirms the impression held by some authorities that the intelligence quotient of this type of child is above normal—the average in his group being 108, which is fully 20 points higher than that of a control group of children not suffering from this condition. He points out that many of this group possessed special features of personality and had environmental difficulties closely related to their attacks of asthma or of itching of the skin.

In them such psychogenic factors as temper tantrums, fright, anxiety and anger often precipitated attacks. Frequently the child was "nervous," presented a problem of behavior and was the only child and overprotected by the parents.

The study clearly presents the psychogenic side of the problem, but it seems to the reviewer that a more thorough discussion of the relationship of these factors to well known specific factors, such as inhalants, would be instructive.

BRADFORD, Rochester, N. Y. [AM. J. DIS. CHILD.]

PSYCHOLOGICAL ASPECTS OF SKIN DISEASES. R. D. GILLESPIE, Brit. J. Dermat. **50**:1 (Jan.) 1938.

Gillespie states the case for psychologic factors in cutaneous diseases. No other system of the body, he says, presents as numerous and complicated relationships to the person as does the skin. From a psychologic standpoint, the skin is first of all an organ of emotional expression. It is more liberally supplied with afferent nerves for pain than any other organ. Therefore, it has special importance in some people in the relationship of deep-seated emotional trends. The skin, according to Freud, is an important source of sexual excitement. Where mental uneasiness expresses itself in motor agitation, the skin may be the recipient of more or less involuntary assaults, such as the fidgetiness which expresses itself in picking of the skin. The skin can be used as a vehicle of expression of hypochondriacal tendencies; the skin has social importance connected mainly with self-decoration and display on the one hand and emotions of shame on the other, and, finally, a lesion of the skin, whether occurring as a disease sui generis or as a result of artifice, can be used as a means of gaining attention and sympathy. Gillespie feels that the chronicity and resistance to treatment of many cutaneous diseases may be due to the fact that they are treated without an appreciation of the psychologic factor. "This is unfortunate because psychogenic diseases are amongst the most curable once their true nature is recognized."

It is suggested that the term neurodermatitis be dispensed with and psychologic diseases in this category be classified instead as:

(*a*) Disturbances of the cutaneous function resulting from emotional causes, such as excessive sweating.

(*b*) Certain diseases based on the erotic function of the skin (pruritus).

(*c*) Diseases in which the skin is employed as a medium for exhibitionism.

(*d*) Diseases in which the skin has been a locus minoris resistentiae to emotional reactions.

Numerous cases of these various types of psychogenic cutaneous diseases are cited, as well as cases of pemphigus, herpes, lichen planus, eczema, urticaria and occupational dermatitis in which psychogenic factors seemed to be of importance.

RATTNER, Chicago.

INFLUENCE OF GLYCEROL ON SKIN NECROSIS PRODUCED BY STAPHYLOCOCCUS TOXIN. M. L. SMITH, Brit. J. Exper. Path. **18**:265 (Aug.) 1937.

Glycerol inhibits necrosis produced in the skin of guinea pigs by staphylococcus toxin. The low values sometimes obtained when staphylococcus antitoxin is

titrated by the intracutaneous method are attributable to the use of a standard serum diluted in glycerol. The inhibiting action of glycerol is specific for the toxin of the staphylococcus. Inhibition is also produced by ethylene glycol, sucrose and dextrose. The action is one of partial destruction of the toxin.

FROM AUTHOR'S SUMMARY. [ARCH. PATH.]

CONGENITAL ICHTHYOSIS WITH RECOVERY. ECALLE and SUZOR, Bull. Soc. d'obst. et de gynéc. **26**:717 (Nov.) 1937.

The infant described weighed 2,900 Gm. at birth. The skin had a varnished appearance, as though collodion had been applied to the entire body, covering it with a membrane through which the color of the underlying skin could be seen. This was bright red at birth but gradually took on the color of light brown ocher. The skin was dry on palpation and devoid of all elasticity. There was ectropion of the lids, and the conjunctivas were congested. The eyeballs could not be seen. There were fissures in the collodion-like layer of the skin, particularly in the region of the flexures. These gradually increased in number, until by the tenth day of life they were well distributed over the entire body. With the confluence of the fissures there occurred a shedding of the outer layer of the skin, suggestive of the casting off of skin by certain animals. The skin gradually took on a normal appearance except for scattered infected areas. The lids returned to normal, and the general condition of the infant was satisfactory. Histologic examination of a section of the skin showed thickening of the corneal layer, with no change in the true skin. The child appeared normal at about the age of 3 weeks. The author states that in this case some developmental abnormality must have interfered with the normal desquamation of the corneum into the amniotic fluid before birth, so that the child was born with the membrane described. A photograph of the child is presented with the text. GLASER, Rochester, N. Y. [AM. J. DIS. CHILD.]

HIGH FAT FEEDING OF ECZEMATOUS INFANTS. J. DAMIANOVICH and A. M. CORDIVIOLA, Arch. argent. de pediat. **8**:859 (Sept.) 1937.

The authors report a number of cases and conclude that a milk with high fat content is harmful to only a small percentage of eczematous infants. They are even under the impression that many of the babies seemed definitely improved if not entirely cured during such feeding.

SCHLUTZ, Chicago. [AM. J. DIS. CHILD.]

CONTRIBUTION TO VIRUS ORIGIN OF PEMPHIGUS VULGARIS. J. WERTH, Arch. f. Dermat. u. Syph. **176**:382, 1938.

Serum from a pemphigus bulla was injected into 31 rabbits (in the spinal canal, in the lumbar region or suboccipitally, and in the anterior ocular chamber), 8 guinea pigs (subcutaneously or in the anterior ocular chamber), 2 mice (subcutaneously) and 1 rat (intratesticularly).

The mice, rats and guinea pigs inoculated subcutaneously showed no reaction; twelve hours after intraocular inoculation the eyes which had undergone injection became inflamed, panophthalmitis developed and the bulbs were destroyed.

The rabbits inoculated intraspinally showed no definite changes, except in 1 case in which local suppuration developed. After intraocular inoculation the eye was destroyed by a suppurative process. In 1 rabbit a subcutaneous abscess developed. Material from an infected eye was grown on the chorioallantoic membrane of the chick. Inoculation of rabbits' eyes with material from the eye was followed by the same destructive process.

Material from rabbit's eye and chick embryo stained by Giemsa's method and with victoria blue showed small round bodies arranged singly or in pairs, tetrads or short chains. The rabbits that had been previously infected in one eye were inoculated in the other eye. Only slight cloudiness appeared. Ten cubic centimeters of blood serum from a previously infected rabbit was injected into a normal rabbit. Attempts to inoculate the recipient by the intraocular route were followed by only slight clouding. The material was still active after passage through certain filters.

The authors conclude that the cause of pemphigus is a filtrable body visible in stained preparations at a magnification of 2,000. It may be cultured in a rabbit's eye or on the chorioallantoic membrane of the chick. Previous infection immunizes the rabbit; this is demonstrable directly (failure of reinoculation) and by passive transfer (intravenous injection of blood serum).

MALIGNANT TUMOR OF PENIS. S. TAPPEINER, Arch. f. Dermat. u. Syph. **176**:425, 1938.

The author reports 18 cases of proved and 1 of doubtful carcinoma of the penis, and 1 of malignant melanoma. Various etiologic factors were occupation (in a petrolatum factory) and phimosis (present in 5 patients), with bladder stones in the preputial sac in 1 case. Location was as follows: on the glans in 5 cases, on the glans and the inner surface of the foreskin in 2, on the inner surface of the foreskin in 4, on the sulcus coronarius in 4, on the urethral orifice in 2, on the frenulum in 1 and in Tyson's glands in 1. Eleven specimens showed keratinizing squamous cell carcinoma and 5 showed immature cells. One lesion was considered to be condyloma acuminatum which had undergone malignant degeneration. The duration varied from six weeks to several years. Lymphadenopathy was present in 6 cases.

A case of malignant melanoma of one year's duration on the inner surface of the prepuce of a 74 year old man is reported. It had arisen in normal skin. There was a history of trauma in this region.

BECKER, Chicago.

RATE OF GROWTH OF FINGER NAILS. R. WIGAND, Deutsche Ztschr. f. d. ges. gerichtl. Med. **29**:75, 1937.

Wigand, because of his interest in ridges on the finger nails in cases of nonfatal arsenic poisoning, attempted to establish a normal rate of unequal growth. These studies were carried out on nails which had been injured near the lunula. Trauma, however, produced cross ridges on the nails, which influenced their growth in some way. In order to acquire standard measurements of unequal growth, Wigand etched the nails with fuming nitric acid, producing a stable xanthoprotein reaction. By this method it was proved that on a right-handed person the right nails grow more quickly; e. g., 1.2 mm. in ten days as against 1.1 mm. for the left nails. The nails of the thumb and small finger grow more slowly than the others.

GEORGE J. RUKSTINAT. [ARCH. PATH.]

MILIARIA SCARLATINOSA SUPPURATIVA. G. LIEBMANN, Med. Klin. **33**:1368 (Oct. 8) 1937.

Three cases in which a finely pustular eruption developed on the basis of the scarlet fever exanthem are reported. In 1 case streptococci were yielded by a culture of the contents of the pustule; in the other 2 the cultures consisted of benign pus-producing organisms. The condition is apparently uncommon. It may be a manifestation of infection of sweat glands damaged by scarlet fever toxin.

SIEMSEN, Chicago. [AM. J. DIS. CHILD.]

PERIARTERITIS NODOSA MUTILANS: REPORT OF A CASE. VRÁNOVÁ, Časop. lék. česk. **75**:76 (Jan. 17) 1936.

Vránová gives a short résumé of the literature and reports a case in detail. A boy aged 4 years was sick for a year, after an attack of measles and two severe attacks of sore throat with infection of the cervical glands. The periarteritis was of the pseudorheumatic, dermatomyopolyneuritic or septic type. The disease progressed, with an undulating type of septic temperature. The following symptoms were present: pain in the joints and muscles; edema of the extremities, the face and the torso; exanthema maculopapulosum; adenitis; foci in the skin simulating erythema multiforme; both superficial and deep hemorrhagic areas of the skin and underlying tissues, and obliteration of arteries, with infarcts of the skin and mutilating necrosis of the terminal phalanges of several fingers. The leukocyte count varied from 20,000 to 45,000, with a shift to the left; eosinophilia was present. The Pirquet reaction was positive, and cultures in Löwenstein's medium showed the presence of tuberculosis. The cause may be a combination of tuberculosis and capillary hypersensitivity or allergy, though the bacillemia per se may be explained on the basis simply of mediastinal tuberculosis.

STULIK, Chicago. [AM. J. DIS. CHILD.]

INVESTIGATION ON RESORPTION OF SUBSTANCES BY SKIN AND MUCOUS MEMBRANES. S. MATSUMOTO, Acta dermat. **28**:79 (Dec.) 1936.

The author injected typhoid vaccine into bullae which he had produced by means of cantharides. In other cases he applied the vaccine directly to the base of the bulla after removing its roof. The positive agglutination reaction in the serum revealed that the vaccine was absorbed and that the patients were immunized, in spite of the absence of any local or general reaction.

The author explains this absence of reaction, in spite of a considerable amount of vaccine, by the assumption that the skin acts as a barrier, permitting the immunizing substances to pass into the system and regulating the resorption of the substances, which causes by-effects to take place slowly and thus avoids marked reaction.

EXPERIMENTS IN IMMUNIZATION BY APPLICATION OF TYPHOID VACCINE TO SCARIFIED CUTANEOUS SURFACES (JENNERIZATION). O. OE, Acta dermat. **30**:85 (Dec.) 1937.

The author tried vaccination with typhoid bacilli by scarification (Jennerization), using the agglutination reaction of the serum as an indicator of acquired immunity. The antibody titer reached its maximum two or three weeks after vaccination, then gradually diminished and disappeared entirely six months later. One inoculation with typhoid vaccine (50 or 100 mg. of bacilli in a 1 cc. suspension) produced usually an agglutination titer of 100 or 200. Two vaccinations with a suspension containing 50 mg. in 1 cc. at intervals of one week produced a titer of 400. The immunizing effect increased with the length of the scarification lines, but not exactly proportionately. Revaccination long after the first inoculation produced a positive agglutination reaction, which took place more rapidly and was of a higher titer. The serum of the treated persons frequently showed a slight group reaction to paratyphoid B bacilli and exceptionally a slight one to paratyphoid A bacilli. No by-effects were observed with this method of immunization.

CLINICAL EXPERIENCE IN TREATMENT OF ERYSIPELAS WITH PRONTOSIL. Y. IGA and T. KATO, Acta dermat. **30**:112 (Dec.) 1937.

The authors treated erysipelas in 31 cases by oral administration of prontosil (the hydrochloride of 4-sulfamido-2′, 4′-diaminoazobenzene), one or two tablets being given daily for the first few days and one tablet daily after the fall of fever.

There were 12 patients under 13 years of age, 11 between 20 and 40, and 8 over 50. The eruption was located usually on the scalp and face, frequently on the lobes of the ears and in 3 cases on the lower extremities. In the majority of cases the temperature dropped to normal within the first three days. The general condition rapidly improved, and in the next two to five days the eruption disappeared. All the patients except 1 who died had a normal temperature after from two to eight days. The eruption subsided within four and seven-tenths days on an average. Relapse occurred in 3 cases, but promptly responded to the medication. Because of the small dose no harmful by-effects were observed. The author believes that the treatment surpasses in effect any form of treatment used for erysipelas.

CASE OF PITYRIASIS ROTUNDA MATSUURA (PITYRIASIS CIRCINATA TOYAMA) IN MANCHURIAN. T. ARASE, Acta dermat. **30**:115 (Dec.) 1937.

The author reports the first case of pityriasis rotunda Matsuura in Manchuria in a man aged 40, who presented sixty-three round or oval, sharply limited, slightly scaly macules, discrete or aggregated, on the trunk and extremities. In the Japanese literature 100 such cases have been reported, and none has been reported in the European literature.

CONTRIBUTION TO KNOWLEDGE OF LYMPHOGRANULOMA VENEREUM: II. ERYTHROCYTE SEDIMENTATION TEST. S. KOYAMA, Jap. J. Dermat. & Urol. **43**:37 (Feb.) 1938.

The author has examined the rapidity of sedimentation of erythrocytes in 57 cases of lymphogranuloma venereum at several stages in the course of the illness. By the Westergren method he found an increase of the rapidity parallel with the process of the illness, reaching a maximum at the height of the illness and decreasing gradually to normal during convalescence and healing. The author considers this test an indicator of prognosis. As the acceleration of the sedimentation appears in the early stages of the process, frequently earlier than the positive Frei reaction itself, it may be used, according to the author, for diagnostic purposes.

CONTRIBUTION TO KNOWLEDGE OF LYMPHOGRANULOMA VENEREUM: III. RELATION BETWEEN TIME OF APPEARANCE OF ALLERGY (FREI REACTION) AND CHANGES IN BLOOD AND INFLUENCE OF INTRAVENOUS INJECTION OF FREI ANTIGEN ON BLOOD. S. KOYAMA, Jap. J. Dermat. & Urol. **43**:38 (Feb.) 1938.

The changes in the blood which are distinct in lymphogranuloma venereum in the stage of the positive Frei reaction are less distinct in the Frei negative stage of the illness. The author found that the clinical symptoms and the changes in the blood run parallel with the degree of allergy. After intravenous injection of Frei antigen slight leukopenia develops, changing into leukocytosis after twenty-four hours. The results of the erythrocyte sedimentation test are similar, the sedimentation diminishing in rapidity after the injection and increasing in rapidity after twenty-four hours.

DERMATOFIBROSARCOMA PROTUBERANS (E. HOFFMANN). I. YAMASAKI, Jap. J. Dermat. & Urol. **43**:44 (Feb.) 1938.

Dermatofibrosarcoma protuberans (E. Hoffmann), called by J. Darier and M. Ferrand *dermatofibrome progressif et récidivant,* is a rare form of tumor never before reported in Japan. The author reports 2 cases, 1 that of a 32 year old man with a tumor the size of a child's head in the occipital region and the other that of a 73 year old woman with a small tumor on the left shoulder.

BLOOM, New York.

ADENOMA SEBACEUM AND ITS ROLE IN NEUROCUTANEOUS SYNDROME: TUBEROUS SCLEROSIS AND ITS RELATIONSHIP TO RECKLINGHAUSEN'S DISEASE. A. KVEIM, Acta dermat.-venereol. **18**:637 (Oct.) 1937.

The author describes 3 cases of adenoma sebaceum with the typical cutaneous lesions and involvement of the central nervous system (epilepsy and mental retardation). Tumors were demonstrated roentgenologically in the cerebrum and around the ventricles. In all cases there were changes in the retina and periostitic deposits in the small bones and in the skull. There was a history of probable heredity in all the cases. The author believes that adenoma sebaceum is merely a symptom of tuberous sclerosis and that there is some genetic connection between these conditions and Recklinghausen's neurofibromatosis. All these conditions are, according to the author, caused by anomalies of fetal differentiation. He mentions the fact that the epidermis and the central nervous system are both formed from the ectoderm, and this explains the logical connection between the cutaneous lesion and the disturbances of the nervous system. In regard to the tumors, which consist of cells difficult to classify, the author thinks that these have developed through some embryoplasmatic dysplasia.

ASTRACHAN, New York.

PRIMARY FOCUS OF TUBERCULOSIS IN VULVA. A. NORDENSKJÖLD, Svenska läk.-tidning. **34**:638 (April 30) 1937.

A girl of 10 years fell ill with swellings of the inguinal lymphatic glands, fever and slight symptoms of vulvitis. Five days later erythema nodosum developed. At the examination, on the twelfth day, the tuberculin test was positive. There was a superficial ulcer in the neighborhood of the external orifice of the urethra (a primary focus) with periglandular edema. Tubercle bacilli were demonstrated in smears from the ulceration and in the extirpated gland. In the latter, typical tuberculous tissue was shown. Regression of the symptoms occurred, and the child was free from fever after a week. The primary focus healed with roentgen treatment. The lymphatic glands decreased in size and eventually were no longer palpable. No tuberculous changes were noted elsewhere in the body. The source and mode of the infection are unknown.

WALLGREN, Göteborg, Sweden. [AM. J. DIS. CHILD.]

Society Transactions

NEW YORK DERMATOLOGICAL SOCIETY

EUGENE F. TRAUB, M.D., *President*

Feb. 23, 1938

FRANK C. COMBES, M.D., *Secretary*

A Case for Diagnosis (Pyoderma? Molluscum Contagiosum?). Presented by DR. J. FRANK FRASER.

M. B., a girl aged 11 months, one of twins, presents a pea-sized firm elevated lesion with a depressed center on the left labium majus. The lesion is of two months' duration. There are numerous other healed lesions about the genitalia.

DISCUSSION

DR. EDWARD R. MALONEY: I should not want to make a definite diagnosis, but my impression is that the disease is molluscum contagiosum. One lesion on the vulva is rather large for that condition and suggests an added infection.

DR. DANIEL G. KUHLTHAU (by invitation): The lesions impress me as being pyoderma, and I should favor that diagnosis.

DR. A. BENSON CANNON: I think as Dr. Maloney does, that the child has molluscum contagiosum with secondary dermatitis. The two nodules showed the central necrotic plug that is so characteristic of that infection, and the large size of the nodules on the labia is certainly not uncommon in a lesion of molluscum that has been subjected to irritation. I have always found it valuable in diagnosis to freeze lesions of molluscum contagiosum with ethyl chloride, after which the central umbilicated necrotic area will show prominently, even though it may not have been visible before freezing. I think isolated lesions of molluscum contagiosum are often difficult to diagnose, especially when they have been irritated and have become red and swollen. I have observed a number of such cases in which the lesion has been mistaken for basal cell epithelioma and removed and biopsy has proved it to be molluscum contagiosum.

DR. R. H. RULISON: I cannot see any lesions which seem to me to represent molluscum contagiosum. It is true that the large lesion on the vulva is umbilicated, but it seems to me to be an indurated pustule. I think the diagnosis is probably pyoderma.

DR. H. H. WHITEHOUSE: I agree with Dr. Maloney. I think the lesions are molluscum contagiosum with secondary infection.

DR. EUGENE F. TRAUB: It is not possible for me to make a diagnosis in this case. On the basis of the present picture it is even difficult to decide what type of lesion is present—whether a spot is just developing or represents an end process. I agree, however, that molluscum contagiosum located in an area where it is subjected to irritation may grow rather large, and it is easy to mistake these large lesions for basal cell epithelioma or even at times for sebaceous cyst.

A Case for Diagnosis (Pigmented Mole with a White Halo). Presented by DR. R. H. RULISON.

D. R., a girl aged 12 years, was referred by Dr. Charles A. Weymuller, of Brooklyn. She has been a cretin since birth. The condition was so severe that

the tongue had to be sutured to prevent asphyxiation. During thyroid medication she has made spectacular improvement, and her development has been normal.

Twenty or thirty small slightly elevated dark brown moles are present on the trunk. During the past year a white halo developed around a mole in the left scapular region. The case is presented because of this abnormality of pigmentation.

DISCUSSION

DR. J. FRANK FRASER: The lesion with the white halo belongs to the group described by Sutton, and the others are brown moles which I think should be left alone. There is hardly one chance in a thousand that any of them will become malignant.

DR. H. H. WHITEHOUSE: I believe the moles should be left alone. Leukodermatous patches do occur, and they also should be left alone.

DR. R. H. RULISON: The condition was described by R. L. Sutton (Diseases of the Skin, ed. 7, St. Louis, C. V. Mosby Company, 1928, p. 629) as leukoderma acquisitum centrifugum under the heading "Vitiligo." He presented some pictures of the condition.

Acneform Iododerma (Iodized Salt). Presented by DR. PAUL E. BECHET.

I. M., a woman aged 29, states that ten years ago she received a course of roentgen therapy for acne vulgaris. After the completion of the course she remained well for three years. She then began to use iodized salt exclusively, and some months later noticed that a few discrete indolent papules appeared on her face; a few of these became cystic. Lesions appeared from time to time until six weeks ago, when an extensive outbreak occurred, which has persisted ever since. Covering both cheeks are a large number of indurated dusky red nodules and infiltrated papules, with no comedos, oily seborrhea or acne pustules.

DISCUSSION

DR. A. BENSON CANNON: I see many lesions that could easily have been caused by iodide or bromide; I am not acquainted with such cysts as this woman has on her face due to iodide or bromide. If I were compelled to make a definite diagnosis, I should call the condition cystic acne. Whether iodide or bromide has anything to do with the smaller papules and pustules, I think, is another question.

DR. R. H. RULISON: I think the condition is an acute exacerbation of old acne. I do not think it possible to determine the cause at the present moment.

DR. J. FRANK FRASER: I agree with Dr. Bechet that this is iodide acne due to ingestion of iodized salt rather than a relapse of old acne vulgaris. Cysts may occur in any form of acne when there is obstruction of the ducts.

DR. H. H. WHITEHOUSE: Years ago, dermatologists used to see a condition like this resulting from heavy doses of iodides. If the patient is susceptible I do not see why the condition cannot be called acneform iododerma due to the ingestion of iodized salt.

DR. EDWARD R. MALONEY: The diagnosis in this case, I think, depends entirely on the history of ingestion of iodine, in iodized salt or otherwise. If the history of the use of iodized salt is definite, I think the clinical picture will fit in with the diagnosis of iododerma. I cannot answer the question brought up by Dr. Cannon. I do not know that such cystic lesions are possible in iododerma. I do not think I have ever seen any. They rather complicate the picture. The condition may, as Dr. Cannon suggests, be cystic acne, and the iodized salt have nothing to do with it. However, if the patient has definitely been taking iodized salt for a long time, I think the condition can be considered iododerma due to ingestion of that form of iodine.

DR. EUGENE F. TRAUB: I agree with the previous speakers and should like to inquire whether these cysts could have been caused by the ingestion of iodide.

With the exception of the cysts, the eruption looks like iodide acne. I should appreciate some information on the point of cysts occurring in iodide acne.

DR. PAUL E. BECHET: The evidence in favor of iododerma is fairly conclusive. The patient remained well for three years after roentgen treatment. She began using iodized salt; within a few months discrete indolent papules and nodules appeared on her face and persisted until six weeks ago, when an extensive acute outbreak occurred. The exclusive use of iodized salt has been continuous for the past eight years. It is inconsistent for acne to remain cured for approximately eight or more years and then suddenly, when the patient is 28, to break out severely enough to cover the face in a few weeks.

A Case for Diagnosis (Lupus Erythematosus?). Presented by DR. EUGENE F. TRAUB.

J. S., a man aged 39, states that the present eruption was first noticed about eight months ago on the right cheek, at the angle of the jaw and that a red erythematous spot seemed to enlarge and form segments of circles. The process developed slowly and seemed to be progressive. There was no scaling, telangiectasia or atrophy. The follicular openings were not plugged or enlarged. There were no subjective symptoms. A similar small red patch had been noted by the patient on the left cheek, but this soon disappeared spontaneously. As this spot was not present when the patient was first seen, it cannot be stated whether it was related in any way to the patch on the right cheek. The Wassermann reaction was negative.

DISCUSSION

DR. EDWARD R. MALONEY: I do not think the condition is lupus erythematosus. I think dermatologists are entirely too ready to apply the term lupus erythematosus to conditions to which it does not belong. There are erythematous lesions with a certain amount of infiltration, arranged in a more or less circinate manner. I should prefer the diagnosis of erythema figuratum perstans, the diagnosis originally given by G. W. Wende (*J. A. M. A.* **51**:1936 [Dec. 5] 1908) in a series of cases in which the picture resembled that in this case. I do not think this lesion has enough of the characteristics of lupus erythematosus to justify application of that term. I do not think it is sarcoid. Sarcoid occurs in peculiar shapes and peculiar arrangements, but I doubt that this is sarcoid.

DR. DANIEL G. KUHLTHAU (by invitation): I do not think it is lupus erythematosus either. The lesion on the opposite side of the face was said to have disappeared, leaving no end results that one would expect to find following lupus erythematosus. There does not appear to be any scarring in the center of this lesion. I should prefer to wait for the biopsy before making a positive diagnosis.

DR. CHARLES W. MCNITT (by invitation): I should think the configurated margin of the lesion would be unusual for lupus erythematosus. The picture does not show any of the characteristics of lupus erythematosus of eight months' duration. There is no central scarring. I have never seen lupus erythematosus begin in a circular lesion without affecting the central portion. It usually begins centrally and spreads at the periphery. I agree with Dr. Maloney's diagnosis.

DR. PAUL E. BECHET: In my opinion the condition is early lupus erythematosus. During the past twenty years I have followed several cases for eight or more years. The disease began exactly like this and terminated in typical discoid lupus eyrthematosus. The eruption appeared and disappeared, with intermissions of several weeks, but eventually developed into discoid lupus erythematosus. There is no doubt that early lupus erythematosus can present a violaceous red patch, with edematous infiltration, and no scaling or atrophy. It may be evanescent for one or two years but eventually becomes permanent and changes into the type which shows scaling, scarring and hyperkeratotic follicles.

DR. A. BENSON CANNON: I do not think the condition shows the slightest suggestion of lupus erythematosus. Not even the location would remind me of

that disease. I think there is enough deep infiltration to place it in the tuberculous group. Probably sarcoid would be more indicative of the cause than any other diagnosis.

DR. J. FRANK FRASER: I agree with those members who think this condition is not lupus erythematosus, especially for the reasons given by Drs. McNitt and Cannon. I am inclined to disagree with the diagnosis of erythema figuratum perstans; there is too much nodular infiltration for that condition. The infiltration suggests sarcoid. The final diagnosis must rest on a study of the microscopic sections.

DR. R. H. RULISON: I do not think that at the moment the lesion clinically represents lupus erythematosus, although as Dr. Bechet points out it is not uncommon to see lupus erythematosus in a rather tumid form in its early phases. My feeling about this condition, based largely on the depth of the infiltration, is that it may be sarcoid.

DR. H. H. WHITEHOUSE: Clinically I do not see any lupus erythematosus here, but Dr. Bechet has stated what lupus erythematosus can do. There is no atrophy left as a result of the lesion which the patient said he had on the other cheek. I agree with most of the members that clinically the condition does not appear to be lupus erythematosus. I do not believe it is erythema perstans.

DR. EUGENE F. TRAUB: I considered about the same possibilities that have been suggested when I saw this patient for the first time, and it was largely because lupus erythematosus seemed to me the most likely of the conditions mentioned to be encountered on the cheek that it was put forward as a tentative diagnosis. What Dr. Bechet has just said, that ultimately the condition might prove to be typical lupus erythematosus, was exactly what I concluded. I thought also of the possibility of erythema elevatum diutinum but this condition is not common and even less common on the face, and it seems to me that in eight months it might have developed further than this lesion has. If the process is sarcoid, what type of sarcoid could it be called? It does not fit into the picture of ordinary Boeck's sarcoid, and surely it is not a Darier-Roussy or a Spiegler-Fendt type. For this reason I do not like to put forward the diagnosis of sarcoid. The configuration, color and course of the disease seem to rule out tertiary syphilid, which was the last possibility I considered.

Arsenical Lichen Planus-Like Dermatitis. Presented by DR. J. FRANK FRASER.

A. C., a Negress aged 28, consulted Dr. Joseph G. Rothenberg, of Mount Vernon, N. Y., on July 19, 1937, because of a generalized psoriasis-like eruption. The Wassermann reaction at that time was 4 plus. She was given twelve intravenous injections of neoarsphenamine and eight intramuscular injections of a bismuth preparation between the date of examination and Nov. 26, 1937. The twelfth injection of neoarsphenamine was followed within twenty-four hours by a generalized vesicopapular eruption. At present a lichenoid pigmented eruption is located on the trunk and extremities. Some lesions on the abdomen bear a strong resemblance to lichen planus. There is a blue line on the gums. The Wassermann reaction has been negative since Nov. 26, 1937.

DISCUSSION

DR. A. BENSON CANNON: I think the case a most interesting one, in that the patient has an exudative arsenical dermatitis, a widespread lichenoid eruption strikingly like lichen planus and lichen spinulosus, the last a type of eruption that I have never before seen complicating an arsenical dermatitis. However, I think that the three types of eruption can be explained by the neoarsphenamine that she has had. It is well known that an arsenical dermatitis will often persist, or even progress, while the patient is under treatment with one of the heavy metals; even in cases in which it eventually clears the eruption proves unusually

resistant to treatment. I think treatment should include elimination of the arsenic, the forcing of fluids, dietary measures, administration of laxatives and of sodium or calcium thiosulfate and the substitution of injections of mercury for those of the bismuth preparation.

DR. CHARLES W. MCNITT (by invitation): It seems to me that the bismuth line on the gums is confined to those areas which might be classified as being infected or subject to pyorrhea alveolaris and is not extensive all over the gums. Hence, I think there is not a great deal of evidence of bismuth poisoning.

DR. DANIEL G. KUHLTHAU (by invitation): I believe the entire eruption is due to arsenic. I admit I could see the bismuth line only in the front, where the gums were badly infected long before the patient had any bismuth.

DR. EDWARD R. MALONEY: It seems to me that this patient has had little arsenic and little bismuth. There is definite discoloration of the gums, which is usually associated with bismuth medication. She has a lichenoid eruption which looks like the type which results from arsenic. She also has lichen spinulosus, as Dr. Cannon has brought out, but I should pay little attention to that, because Negro skin is prone to that condition. Negroes have all sorts of lichenoid eruptions without any apparent cause. I do not know which metal is most at fault, but I should think the eruption is due mainly to arsenic.

DR. R. H. RULISON: I think the interesting point is the one brought out by Dr. Cannon, that this patient has marked lichen spinulosus. As far as my experience goes, that is not common in arsenical dermatitis, although I think that is what this patient has.

DR. J. FRANK FRASER: This patient has had much more arsenical than bismuth treatment. I do not think there can be any doubt that the eruption on the body is caused by arsenic. I have never seen an eruption like this induced by bismuth. The bismuth line on the gums bears no relation to the generalized eruption on the skin.

A Case for Diagnosis (Tuberculosis of the Skin? Atypical Papulonecrotic Tuberculid?). Presented by DR. R. H. RULISON.

H. G., a woman aged 25, presented from the Lincoln Hospital, states that she had some dermatitis in infancy and childhood which was diagnosed as psoriasis. The eruption involved the scalp and never entirely disappeared from this region. In 1932 she had an abortion and at intervals thereafter had attacks of pain in the lower part of the abdomen, more severe on the right side. For the past two years she has been free of this pain. In the early summer of 1937 she felt generally weak and ill and was in bed for two or three weeks. At that time an eruption appeared on both elbows, which gradually improved. She was first seen in June 1937, at which time erythema and atrophic scarring of the elbows were noticed. Her present illness was first noticed in August 1937, when a few indolent erythematous papules appeared near the elbows. Similar lesions developed on the backs of the forearms, the arms, the knees and the lower parts of the thighs anteriorly. A few scattered lesions have been present on the nose, and during the past two weeks a few have appeared on the backs of the hands. There is also an erythematous scaling eruption in the scalp anteriorly.

The patient's normal weight is 135 pounds (61.2 Kg.). Six months ago it had decreased to 115 pounds (52.1 Kg.). At present her weight is 121 pounds (54.9 Kg.). The Wassermann test was negative on two different occasions. Roentgenograms of the heart and lungs showed no abnormality. A Mantoux test on the right forearm with a dilution of 1:10,000 gave a positive reaction with ulceration, the scar of which is still present. Gynecologic examination resulted in a diagnosis of tubo-ovarian inflammation and endocervicitis.

The patient has had seventeen generalized treatments with ultraviolet rays, and 2.5 per cent ammoniated mercury ointment, elixir of iron, quinine and strychnine and cod liver oil with malt have been used. She has gained 6 pounds

(2.7 Kg.). The earlier lesions have subsided, leaving atrophic scars, and occasional new lesions are still developing.

DISCUSSION

DR. H. H. WHITEHOUSE: This eruption has all the features clinically of papulonecrotic tuberculid. There is atrophy, and the lesions are nodular and conform to that diagnosis. The tuberculin test gave a positive result.

DR. EDWARD R. MALONEY: I feel that the condition is tuberculosis of the skin. I do not think the picture fits that of papulonecrotic tuberculid exactly. The one point against the diagnosis is that the scars are much larger than those which occur as the end result of papulonecrotic tuberculid. In that condition the scars are pitted depressions. The tuberculin reaction is positive. Of course the dilution was rather strong, but the reaction was markedly positive, as evidenced by the scarring which resulted. The positive reaction to tuberculin is a point against papulonecrotic tuberculid and more in favor of a real tuberculous process. I think the patient has some type of tuberculosis of the skin. I do not believe it is papulonecrotic tuberculid, yet I do not know what type of tuberculosis of the skin to call it.

DR. DANIEL G. KUHLTHAU (by invitation): I agree with Dr. Maloney. I think the scars are much too large for papulonecrotic tuberculid. The condition is, however, some form of tuberculosis of the skin.

DR. GEORGE M. MACKEE: The scars in papulonecrotic tuberculid may at times be large, and there may be large ulcers on the buttocks and extremities. Such eruptions are often accompanied with Bazin's disease, lupus erythematosus or other tuberculodermas, and the histologic picture is likely to be tuberculoid.

DR. PAUL E. BECHET: I am inclined to the diagnosis of papulonecrotic tuberculid, because many lesions on the arms and legs were rather superficial and not sufficiently ulcerated for tuberculosis of the skin. The scarring was rather typical of papulonecrotic tuberculid. As far as the size of the lesions is concerned, I have seen lesions of papulonecrotic tuberculid the size of a dime or larger.

DR. A. BENSON CANNON: While I think the condition of the skin is due to tuberculosis, I find it difficult to classify it. The lesions are of three different varieties: Those on the backs of her fingers and hands are grayish red, pea sized and umbilicated, with necrotic centers, characteristic of papulonecrotic tuberculid, while the ones on the extensor surfaces of the upper extremities are dime sized and scaly, with clearing atrophic centers and slightly raised red telangiectatic margins, with some patulous follicles, most suggestive of lupus erythematosus. The scaly lesions in the front of the scalp also are strikingly like those of lupus erythematosus, while the cyanosis-like congested mottled appearance on the outside of the arms resembles a deep vascular disturbance, such as is often seen in tuberculous processes of the skin. If I had to make a definite diagnois, I should classify the condition as papulonecrotic tuberculid, as suggested by the presenter, but I rather think the patient has tuberculosis and lupus erythematosus as well.

DR. J. FRANK FRASER: I heartily agree with everything that Dr. Maloney has said. The extensive scarring and its fibrous nature indicate that the process is tuberculous. Although Dr. MacKee did not examine the patient, I think his remarks were appropriate. Some of the lesions do resemble papulonecrotic tuberculid, but it must be remembered that there are two types of microscopic picture in papulonecrotic tuberculid. One shows a tuberculous architecture, another a lymphocytic reaction with necrosis. I feel that this condition is tuberculosis of the skin, but like Dr. Maloney I cannot classify it. I do not think it is lupus erythematosus.

DR. EUGENE F. TRAUB: I failed to notice the lesions on the backs of the hands which were said to look like papulonecrotic tuberculid. The surprising thing to me is that the lesions on the extensor surfaces of the arms and the back of the leg have developed and produced so much damage in such a short time.

They have been present only since last August, and the process is certainly rather widespread for so short a duration. It strikes me that there are no early lesions on the arms, most of them now being scars in the process of healing. Therefore, to make a diagnosis from these lesions it is necessary to do so from the sequelae present. As the scars are large and there are no early lesions present, it is difficult to decide that these might have been papulonecrotic tuberculid. On the other hand, there seems to be little doubt that they belong in the category of tuberculosis or tuberculid. With the few clues the picture is difficult to classify. Another point on which Dr. Cannon remarked is that some of these scarred lesions strongly suggest healing lupus erythematosus. There are telangiectasia and many features which if seen on the face would certainly suggest such a possibility. I do not believe, however, that the patient has lupus erythematosus.

DR. R. H. RULISON: I think the features of the case have been well covered in the discussion. The patient was presented because I found great difficulty in making an exact classification of the type of lesion. There seem to be almost no typical scars of papulonecrotic tuberculid. There are new lesions on the inner and posterior aspects of the left thigh and on the backs of the hands. This woman has some pelvic disturbance which may be the focus from which her trouble arises, although she has been examined by the gynecologists and no recommendation for radical operative procedure was made. A roentgenogram of the lungs showed no abnormality. I was distressed because new lesions continued to appear, and, as Dr. Traub pointed out, the whole condition seems to be progressing rather rapidly, although the patient has been resting and has gained weight. I do not know what should be done, if anything, to try to check the ravages of this condition. Obviously it is far from being under control now.

DR. EDWARD R. MALONEY: I agree with what Dr. MacKee has said about the various types of so-called papulonecrotic tuberculid. I think the trouble is that this term is used too loosely. As Dr. Fraser has explained, examination of sections shows two types. In some cases there is an actual tuberculous structure with caseation. In others there is a tuberculoid structure with no evidence of tuberculosis at all. A third type of eruption consists of an erythematous process like erythema multiforme. I think the term papulonecrotic tuberculid is applied to too many conditions which are not papulonecrotic tuberculid at all and have nothing to do with tuberculosis, either as a tuberculid or as a tuberculous process. There are many other conditions which resemble papulonecrotic tuberculid, but they do not give the end results either of papulonecrotic tuberculid or, as in this case, of a tuberculous process.

Lupus Erythematosus of the Scalp Simulating a Burn with Acid. Presented by DR. PAUL E. BECHET.

R. E., a woman aged 25, presents on her scalp a single patch about 2 cm. in diameter which she states has been present for four months. She is positive that no irritating applications have ever been used. The patch presents a telangiectasia-like redness, is almost devoid of hair and is somewhat scarred, thereby greatly simulating a burn with acid. The patient is exhibited for that reason.

DISCUSSION

DR. A. BENSON CANNON: I noticed only a bright red scar on the scalp, fairly definitely outlined, with no scaling and slightly edematous on pressure. I should suspect the lesion to be the result of an injury rather than lupus erythematosus. I should think either a hot curling iron or an acid would be responsible for the scar.

DR. R. H. RULISON: I think I could see some scaling. It seems to me that an accidental or traumatic lesion would not have the almost perfectly round outline this lesion has. I think it is a patch of lupus erythematosus.

DR. CHARLES W. MCNITT (by invitation): I should think biopsy would be absolutely necessary to diagnosis here. I have no further comment to make on

this case, but I should like to ask the members for information about lupus erythematosus of the scalp with loss of hair and apparent scarring and regrowth of hair after injection of a gold preparation. Is that a common observation? I observed such a result. The diagnosis of lupus erythematosus was confirmed by biopsy and the picture seemed to be characteristic.

DR. GEORGE M. MACKEE: I have never seen hair regrow on a patch of lupus erythematosus. In all cases that I have observed, when the disease has caused atrophy sufficient to make the hair fall the alopecia has been permanent.

DR. PAUL E. BECHET: The reason for presentation of the case was brought out by Dr. Cannon. I will admit the redness and acute appearance of this patch are strongly suggestive of some injury, either application of an acid or a burn of some kind. The case is interesting from that point of view. The patient is an intelligent girl and states that there has been no trauma, burn or cauterizing treatment of any kind. The lesion has been present for eight months. There are atrophy and loss of hair, most of the patch being denuded. As far as return of hair following treatment and cure of lupus erythematosus are concerned, I agree with Dr. MacKee, but I recall 1 case in which the lupus erythematosus of the scalp was rather superficial and response to therapy rapid. I thought I was able to see some regrowth of hair in the patch affected, but it did not become completely covered.

DR. CHARLES W. MCNITT (by invitation): In the case I mentioned the history was short. There was faint erythema. The area was entirely devoid of hair. The condition might fall into the same class as that mentioned, of early involvement with no permanent scarring. The hair has certainly regrown. The histologic section was characteristic of lupus erythematosus.

DR. EDWARD R. MALONEY: I agree with Dr. MacKee. I have never seen hair grow in a scar left by lupus erythematosus.

EUGENE F. TRAUB, M.D., *President*

April 26, 1938

FRANK C. COMBES, M.D., *Secretary*

Angioma of the Cheek. Presented by DR. J. FRANK FRASER.

A. R., a girl aged 11 years, has an angioma on the right cheek, which extends through from the skin to the buccal mucous membrane. She is presented for suggestions as to therapy.

DISCUSSION

DR. CARROLL S. WRIGHT, Philadelphia (by invitation): Just recently I observed a case in which a similar lesion was situated on the back of the neck, but I felt the problem was not dermatologic, in spite of the fact that the patient consulted a dermatologist. I turned the patient over to a surgeon, who obtained good results. This lesion penetrates through the cheek, and I do not know how far one can go surgically. In my case the enlarged vessels were dissected out, the skin drawn over and a favorable result obtained.

DR. A. BENSON CANNON: As the child is not sensitive over the appearance of her face, I should suggest that the angioma be left untreated for a few years, to see if it will not disappear spontaneously. Should it be necessary to remove the angioma at any time, I think that the lesion is particularly suitable for injection of a sclerosing fluid, either quinine dihydrochloride or sodium morrhuate. In addition to the tumorous portion of the lesion, there are several large prominent veins that could be thrombosed easily, and I should think a most excellent result could be obtained by this method.

DR. EUGENE F. TRAUB: I have a private patient at the present time, a woman aged 24, who has a cavernous angioma even more extensive than this one but somewhat similarly located. She has had about one-half dozen injections of quinine and urea hydrochloride, and the result thus far has been most gratifying. This patient does not present a difficult problem from the standpoint of injection. Another possibility that might be given consideration is that of inserting radium needles into the center of the lesion. The chief objection to such a procedure is that the patient is a little too old for irradiation to produce the best results.

DR. J. FRANK FRASER: What is the advantage of leaving the lesion alone until the child gets older?

DR. A. BENSON CANNON: While I have never seen an angioma disappear spontaneously without ulceration, a sufficient number of cases have been reported by reliable physicians to leave little doubt that angioma does disappear spontaneously in some instances. The members probably recall that at one of our previous meetings Dr. Bechet cited a case of a very large angioma which had disappeared spontaneously, leaving little or no evidence of its previous existence when the patient was seen after five years. Several other physicians mentioned somewhat similar observations.

Disseminated Lupus Erythematosus Treated with Sodium Gold Thiosulfate. Presented by DR. FRED WISE.

E. D., a girl aged 7 years, has had an eruption on the face and upper extremities for one year. Physical examination shows no deviation from normal, and the child's general health is good. On the face the eruption has the typical batwing outline on the nose and cheeks. On the arms and forearms the eruption consists of large groups of somewhat indurated, discoid and boggy lesions, resembling sarcoid of Boeck. Some of the last type showed central areas of atrophy.

A series of injections of a bismuth preparation failed to bring about improvement in any of the lesions. Therefore, small doses of sodium gold thiosulfate were administered, the dose beginning at 2.5 mg. and gradually increasing. Improvement set in after the first two injections. There was no leukopenia. The patient is presented as showing an example of the disseminated form of the disease in which the use of a gold preparation appeared to be beneficial.

DISCUSSION

DR. CARROLL S. WRIGHT, Philadelphia (by invitation): Since Dr. J. F. Schamberg and I published our first report on the use of sodium gold thiosulfate (ARCH. DERMAT. & SYPH. **15**:119 [Feb.] 1927) we have been damned more often than praised for our use of gold, particularly in my own city, where I believe I am the only dermatologist still using the metal. It is true that injections of a gold preparation often cause a flare-up in the disease, but I think that is chiefly because the drug is not handled properly. There are two points I want to make in this connection. One is that a definite guide as to whether gold may be safely used is available. R. S. Weiss, of St. Louis, pointed out the fact that gold therapy be avoided in cases of leukopenia. I think that is important. Since I published my report on the ten year use of gold (ARCH. DERMAT. & SYPH. **33**:413 [March] 1936) I have paid more attention to this point. When the leukocyte count is 6,000 or less, I use bismuth therapy to bring it up. When it reaches a higher level, gold therapy may be safely instituted. One has to be careful in estimating the dosage. Dr. Wise mentioned that in this case he was using only about 5 mg. In 1 case that I reported in my paper in 1936, an old lady reacted to 5 mg., and after the second dose, of 2 mg., the eruption disappeared. A total of 7 mg. caused the eruption to disappear in her case. She was 72 years old. Since that time I have treated 2 children, both with leukopenia, in whom I brought up the leukocyte count with bismuth therapy. There was no improvement in the lupus erythematosus during bismuth therapy, but later gold injections were given and the lupus erythe-

matosus cleared. In both those cases bismuth and gold preparations were used alternately and white blood counts made every few weeks.

The other point is one that was recently called to my attention. Dr. Schamberg and I cured a patient some years ago, and I had forgotten about the technic used. It is known that exposure to sunlight aggravates the disease. This particular patient came in with lupus erythematosus disseminated over the face, forearms and hands and a temperature of 104 F. She was placed in the hospital, the affected parts protected carefully and ultraviolet radiation applied to all the rest of the body. In those days we did not make leukocyte counts, so I do not know what the count was. The temperature began to drop. Gold therapy was then started, and that woman is well today. I had a letter from the patient's husband the other day in regard to a girl who died of acute lupus erythematosus down in Louisiana. He wanted to know if the treatment used in his wife's case so successfully might not have saved this girl. I have been fortunate in not having observed any cases during the epidemic of the disseminated type that is apparently taking place in Philadelphia, but I believe that in the majority the spread of the disease is due to improper handling. That is not a criticism of the dermatologists, because a great many of the patients are seen first by their family physician, who commonly rushes in with treatment with injections of a gold preparation or large doses of ultraviolet radiation. I think in time, as dermatologists learn more about the dosage of gold, much better results will be obtained. I refer to lupus erythematosus in general, and not the disseminated type. I think many patients are badly treated in the beginning and therefore the disease becomes disseminated.

Dermatitis Herpetiformis; Cancer of the Pancreas. Presented by Dr. Eugene F. Traub.

K. S., a woman aged 69, was previously presented before this society on Oct. 26, 1937 (Arch. Dermat. & Syph. **37**:891 [May] 1938), with a condition diagnosed as dermatitis herpetiformis.

After the last presentation this patient was hospitalized, and her eruption practically disappeared. Shortly after her return home the patient became jaundiced, and the eruption again broke out. She has lost considerable weight and gone downhill in every way. Examination revealed a tumor of the pancreas, which was probably responsible for her jaundice, which was painless. Whether this tumor is in any way directly or indirectly responsible for her eruption is only a matter of surmise.

DISCUSSION

Dr. A. Benson Cannon: Either the dermatitis herpetiformis or the jaundice or more likely both conditions may account for the intense itching in this case. The treatment for arsenical jaundice is definitely indicated. The patient should be put to bed—preferably hospitalized—placed on a regimen including forced fluids, colon irrigations, suitable diet and injections of calcium thiosulfate or dextrose. As the patient's eruption entirely cleared when she was in the hospital before, it is likely that by the treatment just mentioned one might cure both the jaundice and the dermatitis. I think that when such a vital organ as the liver is affected enough to produce jaundice so pronounced as that in this case, one should institute medical treatment without delay. I have noted that the cases of arsphenamine jaundice which have ended fatally have always been those in which the patient remained ambulatory for a number of weeks, until the jaundice became most intense.

Dr. Eugene F. Traub: The jaundice is due to obstruction of the common duct by the cancer, probably in the head of the pancreas, and it is problematic whether hospitalization and medical treatment will do much good under the circumstances.

Progressive Scleroderma Associated with Stricture of Esophagus and Rectum; Improvement After Cervical Sympathectomy. Presented by DR. HOWARD FOX.

Mrs. W. A. P., aged 39, states that about twelve years ago she first noticed changes in her skin, which have gradually progressed. She now presents typical scleroderma of the progressive type, involving especially the hands, forearms, face, neck and legs. The right fingers are swollen and slightly stiff. There are no manifestations of Raynaud's disease at present, though she states that this condition has affected the hands for years. Roentgenograms of the scapular region, right forearm and thumb showed calcareous deposits.

Her chief complaint for a long time has been dysphagia. Examination several years ago with the esophagoscope showed a stricture at the lower end of the esophagus, which was not relieved by the administration of belladonna. A piece of tissue was excised, and histologic examination is said to have shown simple inflammatory tissue.

For the past two years she has suffered from constipation and has noticed that the caliber of the stools was becoming progressively smaller. Two operations were performed in 1937 for stricture of the rectum.

She presents a few spider nevi of the face and states that she and one brother suffered from severe nosebleed in childhood.

Cervical sympathectomy was performed nine months ago and has thus far been followed by decided improvement in the hidebound condition of the fingers, lessening of the severity and frequency of the Raynaud's phenomena and an improvement in her general condition.

DISCUSSION

DR. HOWARD FOX: The chief point of interest in this case is the improvement following cervical sympathectomy. The dysphagia and rectal stricture were also unusual. I should like to ask if any one has observed a case of this type of scleroderma with dysphagia or rectal stricture.

DR. FRED WISE: To answer Dr. Fox: I had 3 cases of progressive scleroderma under observation. In 2 of them operation was performed at the Mayo Clinic by Dr. A. W. Adson. In 1 case there was relief for six months and in the other for a year, but in both there was recurrence which was as severe as the original trouble. In the third case there was no improvement.

DR. A. BENSON CANNON: A few years ago I sent a patient with scleroderma with marked sclerodactylia and pain to the Mayo Clinic for operation, and I was notified that sympathectomy was no longer done there because the results had been disappointing. I think it most interesting that this patient should have received so much relief after the operation, and I wonder whether the benefit has been actual or only psychologic—either of which probably was worth while.

American Leishmaniasis. Presented by DR. HOWARD FOX.

W. H. P., a man aged 63, recently spent several months in the jungle of Venezuela, preparing skins of birds for a museum. His hands were frequently scratched during his work, and as a result of the handling of arsenic as a preservative, numerous small sores developed. All except one of these healed quickly. He now presents an indolent ulcer of six weeks' duration on the back of the left hand. It is crateriform and the size of a 5 cent piece, has a reddish base and a slight discharge and is surrounded by a reddish edematous border. There is no pain or appreciable tenderness. There are considerable swelling of the left hand and forearm and enlargement of the epitrochlear gland. After prolonged search of scrapings from the border of the ulcer a few typical leishmaniae were demonstrated under Wright's stain. The patient has taken no drugs and has had no fever or other constitutional disturbance. The Wassermann reaction was negative.

DISCUSSION

DR. CARROLL S. WRIGHT, Philadelphia (by invitation): Dr. Fox promised to say something about the difference between oriental sore and the American type of leishmaniasis.

DR. HOWARD FOX: During an informal discussion some one asked why this condition was not oriental sore. The answer is that the eruption was acquired in Venezuela. Oriental sore is not endemic in any part of the Western Hemisphere. The few patients with the condition seen in America come as a rule from Asia Minor. From the appearance of the lesion alone the differential diagnosis between oriental sore and American leishmaniasis cannot be made. Oriental sore or "button of one year" as it is called in Turkish, is self limited, whereas the lesions in the American type of leishmaniasis tend to continue more or less indefinitely unless treated. This patient has only one ulcer, whereas in the majority of cases several are present.

Sclerodactylia Following Injury. Presented by DR. FRANK C. COMBES.

E. C., a man aged 40, presents a hemorrhagic crust on the inner aspect of his left index finger, near the tip. The skin on the finger is smooth, shiny, atrophic and devoid of hair. One year ago the tip of his finger was injured with a hammer. Periodically since that time he has had recurrent hemorrhagic bullae in this area, each lesion lasting several weeks. Roentgenograms taken two weeks after the injury showed some slight rarefaction in the terminal phalanx. A roentgenogram taken a year later showed the same picture and, in addition, productive changes in the terminal joint. The patient now has almost complete ankylosis of the finger and some tenderness on pressure. There is no Raynaud's phenomenon, although cold weather causes considerable pain in the injured finger.

DISCUSSION

DR. FRANK C. COMBES: The question here is whether it would be possible for these changes in the bone to take place in scleroderma a few weeks after the injury, if it is decided that the injury is in any way responsible for the sclerodactylia. This case involves compensation, and the contention that the whole process is due to the injury has been accepted.

DR. A. BENSON CANNON: I should question the diagnosis of sclerodactylia in a case like this, due as it was to injury. If there are any changes in the skin, which in this case are negligible, can they not be explained by the injury and the bandaging and limitation of motion that he has had? It seems to me that the slight changes noted both in the skin and in the bone are only a natural consequence of the injury, and I should not interpret the findings as due to sclerodactylia.

DR. HOWARD FOX: Does Dr. Combes consider the changes a localized manifestation of scleroderma?

DR. FRANK C. COMBES: The patient has all the evidence of sclerodactylia. That finger is smaller than the others. It is free of hair. There is apparent atrophy of the appendages of the skin, which is shrunken and shiny, and he can barely flex the finger. There is some atrophy of the finger nail.

Pemphigus. Presented by DR. EUGENE F. TRAUB.

A. C., a woman aged 34, was first seen at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital on April 15, 1938. She has had numerous bullous lesions scattered over the face, chest and back, particularly in the seborrheic areas. Some of these blisters distinctly suggest crusted seborrhea, but recently blisters have arisen from a noninflammatory base. Within the last few days a lesion has appeared on the palate. A patch test with potassium iodide gave a negative result, and there is no history of ingestion of drugs.

DISCUSSION

DR. FRED WISE: I think the diagnosis is difficult to make and hard to accept. I should certainly exclude an iodide eruption. P. E. Bechet reported cases of iodide eruption following ingestion of iodized salt alone (ARCH. DERMAT. & SYPH. **29**:529 [April] 1934). In most cases of the Senear-Usher type of pemphigus there are lesions resembling lupus erythematosus on the face. I should suggest making a careful investigation to eliminate the possibility of a drug eruption.

DR. EUGENE F. TRAUB: The first time this patient was seen, the eruption was limited largely to the face and the center of the chest—the usual seborrheic areas. The lesions on the face even looked like seborrheic eczema, and it was only with difficulty that some of the lesions were recognized as blisters. The patient states that she has taken no medication, particularly iodides and bromides. I realize, however, that such a statement does not exclude the possibility. In a case recently observed at the University Hospital, Ann Arbor, Mich., there were iodides and bromides at various times in the urine, despite the fact that the patient's entire intake of both food and medicine was carefully watched to exclude ingestion of either of these halogens as far as possible. It was finally found that there was a small amount of bromide in the flour from which the white bread had been baked. Therefore, the patient may be getting more bromide or iodide than I am aware of.

Multiple Epitheliomas. Presented by DR. EUGENE F. TRAUB.

C. M., a man aged 58, was first seen at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital on April 13, 1938. The duration of his eruption is three and one-half years. He states that he had psoriasis about thirty-two years ago. Arsenical medication was prescribed. The patient now presents multiple flat lesions with typical rolled pearly borders, scattered on different sites on the trunk and extremities. Several of the lesions have become infiltrated, and tumor masses have developed. Whereas the smaller flatter lesions are all unquestionably basal cell epithelioma and the clinical diagnosis has been substantiated by microscopic examination, the larger lesions may possibly have undergone a transition to squamous cell epithelioma; this is one of the reasons for the patient's presentation. Thus far no microscopic studies have been done on the lesions showing tumor formation. There is some question as to whether this patient actually had psoriasis, but there is little doubt that there was a period of ingestion of arsenic.

DISCUSSION

DR. CARROLL S. WRIGHT, Philadelphia (by invitation): This case is of interest to me, because Dr. R. J. Friedman and I reported 5 cases in which psoriasis and multiple basal cell epitheliomas occurred together (ARCH. DERMAT. & SYPH. **27**:70 [Jan.] 1933). One of these cases had been observed by Dr. J. F. Schamberg at one time and a diagnosis of psoriasis had been made; Dr. Schamberg at the time observed no epitheliomas. Dr. Friedman and I examined the epitheliomatous lesions in our cases carefully for arsenic and were unable to demonstrate arsenic in any of them. This patient today certainly had no psoriasis, but I believe epithelioma does not necessarily originate in psoriatic patches, although this may occur.

DR. A. BENSON CANNON: The history of arsenical medication and the finding of arsenic in the blood, urine and skin of patients suffering from multiple superficial basal cell epitheliomas has been so constant in my experience that in recent years I have considered the possibility that the condition is due to retention of arsenic. Only a few weeks ago I questioned a patient with a similar condition at the Vanderbilt Clinic. He stated that he had received arsenical therapy some ten years before. The members remember Dr. D. W. Montgomery's paper, read

before the American Dermatological Association a few years ago (ARCH. DERMAT. & SYPH. **32**:218 [Dec.] 1936), in which he enumerated the cases of epithelioma in which there was evidence of retention of arsenic.

DR. CARROLL S. WRIGHT, Philadelphia (by invitation): Have the lesions themselves ever been examined for arsenic?

DR. HOWARD FOX: It is well known that epithelioma of the squamous cell type may develop on a psoriatic patch, but there is no proof that this particular man ever had psoriasis. He had not been seen previously by a competent dermatologist.

A Case for Diagnosis (Poikiloderma?); Latent Syphilis. Presented by DR. EUGENE F. TRAUB.

P. I., a man aged 41, came to the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital on Feb. 11, 1938, with an eruption of eighteen years' duration. On the trunk, arms and legs there are irregular, poorly defined, atrophic and pigmented areas, with ichthyotic scaling. There are no subjective symptoms. The eruption improves slightly in the summer. The patient had had sixty injections of arsphenamine previous to the onset of this eruption. The Wassermann and the Kahn reaction were 4 plus. Histologic examination showed poikiloderma in the inflammatory degenerative stage.

The eruption on the lower extremities certainly suggested mild ichthyosis, and there can be little doubt that the patient presents ichthyosis in addition to the eruption for which he is shown. Despite the histologic diagnosis, the appearance of the eruption following the antisyphilitic treatment is suggestive of arsenical dermatitis. The eruption on the lower extremities could easily be explained as arsenical dermatitis in a patient with a tendency to slight hemostatic dermatitis as well.

DISCUSSION

DR. HOWARD FOX: This case is most unusual and the diagnosis extremely difficult. The picture resembles closely that in a case I presented before the society about two years ago (ARCH. DERMAT. & SYPH. **32**:975 [Dec.] 1935). The eruption in my case was also of long standing, and syphilis was also present. The histologic examination was inconclusive. The patches were apparently radioresistant, but some of them cleared after the maximum number of fractional doses of roentgen radiation.

DR. A. BENSON CANNON: I have been interested in this type of disease for some time and have had occasion to study 3 cases of similar atrophy and pigmentation of the skin following arsphenamine dermatitis. I regret that a patient with a similar condition, whom I had scheduled for presentation this afternoon, did not appear. She was treated at a local hospital with arsphenamine, following which a generalized, exfoliating dermatitis of lichenoid type developed. As the dermatitis cleared, her skin became deeply pigmented and increasingly atrophic, with total alopecia except for a little splash of hair on the crown of the head. With the increasing atrophy of the skin, a peculiar superficial network of anastomosing veins of the skin, arranged in a lacelike pattern with each section about 1 cm. in diameter has developed. The arrangement is much like that of fat as seen under the high power microscope and is much more noticeable on the cheeks, where it produces a most remarkable appearance, the like of which I have never seen before. Dr. Hopkins had a case of similar arsenical dermatitis resulting in atrophy of the skin. The patient subsequently died. The history of arsphenamine dermatitis in all 3 of my cases, the 1 presented by Dr. Fox, and the 1 under discussion would seem more than coincidence, and I believe that the cutaneous changes must be interpreted as due to the action of arsenic, either on the vascular system directly or on the endocrine system.

Neural Leprosy. Presented by DR. HOWARD FOX.

M. A., a woman aged 38, was born in Greece and lived there until she was 21. Since then she has spent her entire time in Cleveland and in New York. The first signs of the disease were noted eight years ago as an abnormal sensation of the legs. Phenol was applied to certain areas; this produced "blisters" and resulted in scars the size of a large coin. She now presents enlarged ulnar nerves; swelling, wrinkling and pigmentation of the back of the hands; moderate contracture of some of the fingers; anesthesia of the feet extending to the thighs, and a healing trophic ulcer under one great toe. Lepra bacilli were demonstrated in nasal smears.

Pityriasis Lichenoides et Varioliformis Acuta. Presented by DR. EUGENE F. TRAUB.

S. K., a man aged 37, was first seen at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital on March 30, 1938, with an eruption of four week's duration. The patient presents small discrete papulosquamous dusky red lesions, generalized over his body. No itching is present. The eruption is more extensive on the anterior part of the body and on the extremities. The dusky red lesions suggest hemorrhage into the center of the papules. Some of the lesions are also distinctly varioliform.

Granuloma Inguinale. Presented by DR. HOWARD FOX.

A. M., a Negress aged 26, presented from the dermatologic wards of Bellevue Hospital, first noticed an eruption two and one half years ago. At that time the Wassermann reaction was found to be positive, and she was given antisyphilitic treatment for one year, without effect on the eruption. She now presents an extensive ulceration involving the lower part of the pubes, the labia majora, the groins, the perineum and the perianal region. It is covered by beefy red granulations and has a raised rolled border. There is a moderately profuse seropurulent discharge. She was treated later for granuloma inguinale by fifteen injections of Fuadin (sodium antimony biscatechol-disulfonate) and forty injections of antimony and potassium tartrate, without success. The Wassermann reaction of the blood and of the spinal fluid are at present negative. Examination for Donovan bodies gave negative results.

Lichen Nitidus. Presented by DR. FRED WISE.

A. S., a man aged 25, was admitted to the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital on April 23, 1938. He had an eruption on both forearms, the backs of the hands, the shoulders, the abdomen and the upper part of the back. The duration was two months.

Examination shows a widespread eruption on the anterior aspect of the wrists and forearms, consisting of millet-sized yellowish hard glistening hemispherical papules, some arranged in clusters and some scattered. On various parts of the torso there are groups of similar, but less defined and less elevated papular elements of the same type as those on the forearms. There are no subjective symptoms. Routine laboratory tests gave negative results, and the patient's health is normal.

Lupus Miliaris Disseminatus Faciei. Presented by DR. EUGENE F. TRAUB.

A. P., a man aged 22, was first seen at the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital on March 28, 1938, with an eruption of four months' duration involving the cheeks and eyelids and scattered generally over the greater portion of the central part of the face. The papules are rather reddened and inflamed and on diascopic pressure show a brown central

discoloration suggestive of an apple jelly nodule. Where the lesions are most profuse, some of the papules have become confluent. The nodes on the right side of the neck are enlarged. A report from the clinic for patients with diseases of the chest is as follows: "We found prolonged expirium at the right apex, but no moisture. The family history and the previous history gave no indication of infection with acid-fast bacilli. Nevertheless, we think that many years ago this patient had a parenchymatous lesion, which healed by itself. There is certainly a primary complex present, although the lesion clinically and roentgenologically should be regarded as healed. Owing to the patient's age and the acute dissemination of miliary tubercles over the face, however, we should like to see him at intervals of six weeks. The sputum, as we had foreseen, is normal."

Examination of the urine showed no abnormality, and histologic examination substantiated the clinical diagnosis.

Report on a Case of Pyoderma Gangraenosum. Presented by DR. HOWARD FOX.

P. L., a Negress aged 23, was previously presented before this society in November 1937 (ARCH. DERMAT. & SYPH. **37**:1075 [June] 1938). Subsequent to presentation further examinations were made to exclude tuberculosis. Histologic examination by Dr. Douglas Symmers of tissue from the edge of the ulcer showed acute and chronic inflammatory tissue with no evidence of tuberculosis. Smears of biopsy material showed no tubercle bacilli. Inoculation of a guinea pig failed to demonstrate either gross or microscopic evidence of tuberculosis. The tuberculin test gave a positive result with a dilution of 1:100,000 and a negative result with a dilution of 1:10,000,000.

Demonstration of Moulages. Presented by DR. HOWARD FOX.

The following moulages were given to me by Dr. Mauricio Weinstein, from the service of Prof. Jaramillo, Dermatologic Clinic, Santiago, Chile:

(1) Basal cell pigmented epithelioma; (2) pigmentation due to gold; (3) Majocchi's disease; (4) chancre, and (5) lymphogranuloma venereum, initial lesion.

A Case for Diagnosis (Dermatitis Herpetiformis?). Presented by DR. HANS J. SCHWARTZ.

Granuloma Annulare. Presented by DR. FRED WISE.

Neurotic Excoriations. Presented by DR. HOWARD FOX.

Contact Dermatitis (Generalized). Presented by DR. A. BENSON CANNON.

Basal Cell Epithelioma Arising from the Hair Follicles, on Scar Tissue. Presented by DR. FRANK C. COMBES.

Dermatitis Herpetiformis. Presented by DR. EUGENE F. TRAUB.

Papulonecrotic Tuberculid. Presented by DR. HOWARD FOX.

Extensive Nodular Syphilid. Presented by DR. HOWARD FOX.

Syphilis. Presented by DR. FRED WISE.

PHILADELPHIA DERMATOLOGICAL SOCIETY

FRANK C. KNOWLES, M.D., *Chairman*

March 18, 1938

THOMAS BUTTERWORTH, M.D., *Secretary*

A Case for Diagnosis (Epithelioma? Tuberculosis Cutis?). Presented by DR. BERTRAM SHAFFER (by invitation).

J. M., a white woman aged 41, has a painless lump on the left side of the neck which developed about two years ago. When this had reached the size of a pigeon's egg, in November 1936, it was excised. The patient states that "tuberculosis germs" were found in this tissue. The lesion recurred in one month, but she did not consult her physician until May 1937, at which time roentgen therapy was instituted. A short time later the lesion broke down and has been extending ever since. The patient's weight has decreased from 140 to 118 pounds (from 63.5 to 53.5 Kg.) in the past year. She has no chills or fever. She now presents a palm-sized group of coin-sized ulcers set in telangiectatic, noncontractile but adherent scar tissue on the left side of the neck and curving under and in front of the auricle to involve the left side of the face. The ulcers have raised rounded, sometimes slightly undermined borders. Their bases are covered with adherent seropurulent material. Roentgenograms of the left jaw, the skull and the chest showed no abnormality. The Kolmer and the Kahn reaction were negative. Urinalyses and a blood count showed nothing abnormal. Smears for fungi and acid-fast organisms were negative. Cultures were made, but these have not been reported on.

DISCUSSION

DR. DONALD M. PILLSBURY: It seems to me that the lesion varies somewhat in its appearance. In the upper portion the rolled border is a good deal more suggestive of some tuberculous process. I think that one biopsy may not tell the whole story.

DR. FRED D. WEIDMAN: There seems to be a tumid quality in the rolled margin, and that was borne out in the sections; there was high grade edema. The infiltration does not impress me as granulomatous or neoplastic but rather as a fusospirillary dermatitis. Of course I know the whole picture in this case does not fit in with that diagnosis. However, spirilla exist in various symbiotic combinations, and I suggest that studies be made particularly in the bacteriologic field in this case. In places there is an undermined margin which reminds me of the picture in a case of amebic dermatitis which I recently observed at the Philadelphia General Hospital.

DR. JOHN H. STOKES: I should like to call attention to the way in which the cartilage has been treated by the process. That often is a help in differentiating the more superficial infectious type of process from the malignant, the tuberculous and the syphilitic. The cartilage of one ear has been perforated, and at the juncture of the lobule and the side of the face the incisure extends well up into the cartilage also, so that I think, whatever may be said about the process as a whole, the infection is not going to turn out to be a superficial type. I think the destructive effect on the cartilage brings it pretty close to either tuberculosis or cancer, for it is rather hard to imagine anything else that so neatly punches holes through a structure that is as generally resistant as cartilage.

NOTE.—After further observation the condition was placed in the group described by F. L. Meleney under the title "chronic burrowing, undermining ulcers" caused by a microaerophilic streptococcus. By special cultural methods, such an organism was cultured from the lesion. Zinc peroxide was applied to the ulcer daily and a cure effected after several months.

Morphea. Presented by Dr. W. R. Hill (by invitation).

C. S., a white woman aged 22, presents at the median line of the forehead, at the edge of the hair, a well defined whitish firm smooth thumb-sized patch, slightly elevated and surrounded by a violet-tinted halo. The right malar prominence is somewhat accentuated, giving the face an appearance suggestive of hemiatrophy on the left. The onset was gradual, a smooth flat dusky area appearing on the midline of the forehead eight months ago. There is no history of preceding physical or psychic trauma and no subjective symptoms. The lesion has gradually enlarged. Physical and laboratory examinations showed no abnormality.

DISCUSSION

Dr. Frank C. Knowles: One outstanding feature in this case seems to be an unusual elevation of the central portion of the lesion. Most lesions in this disease are flat. There seems to be some fibrous overgrowth of hypertrophy in the central part, making it more rounded than usual, although clinically it seems to be typical.

Dr. Donald M. Pillsbury: I think this case would be an ideal one in which to use mecholyl iontophoresis, as the results in this type of sharply circumscribed morphea have been striking.

A Case for Diagnosis (Psoriasis of the Hands? Moniliasis?). Presented by Dr. W. R. Hill (by invitation).

R. S., a white woman aged 35, noted reddish lesions eighteen months ago on the inner side of the left thigh, just above the knee. At that time fissures appeared between the toes, and the patient had anal pruritus. The latter condition cleared one year ago, at which time the eruption appeared on the hands, together with occasional red macules on the chest. She had one attack of hives two years ago. Up to nine months ago she was employed as a nurse in a physician's office and came in contact with formaldehyde. The patient now has severe seborrhea of the scalp and yellowish hyperkeratotic scaling lesions on the palmar surfaces of the hands, with fissuring. There are oval discrete to confluent reddish scaling pea-sized papules on the elbows. The skin about the anus is white, macerated and moist. The patient has a few carious teeth, but examinations show no other abnormality. A year ago she had several roentgen treatments on the hands. She also has had applications of anthralin (dihydroxyanthranol) ointment and of ultraviolet radiation; there has been little response to any form of therapy.

DISCUSSION

Dr. John H. Stokes: I think the pitting of the nails is suggestive. I do not see how one can make an absolute diagnosis of psoriasis in the practically complete absence of other lesions. There are the beginnings of something on the elbows. I think it would be interesting to make a therapeutic test with viosterol in doses containing 400,000 units of vitamin D.

Dr. Donald M. Pillsbury: I saw this patient on five or six occasions about a year ago, at which time she had intertriginous lesions of several toes and of the gluteal cleft which I took to be simply due to fungi. I did not take scrapings. A grouped follicular eruption later developed; I considered this to be trichophytid. I think the sequence of events is interesting, if the condition should prove to be psoriasis.

Dr. Carroll S. Wright: In a case of psoriasis of the palms and soles in a boy of 7 or 8 years I gave 150,000 units of vitamin D daily. The condition cleared in two weeks and then relapsed while vitamin D was still being administered.

Lymphangiectasis Associated with Naevus Flammeus and Lymphangioma of Scrotum and Thigh. Presented by Dr. James Murlin Flood.

J. B., a white man aged 27, suffered from an undiagnosed fever at the age of 15. A testicle and the right thigh were swollen and he was in bed for a week. Surgical

drainage followed an injury to his hip in 1920, and he underwent an appendectomy and exploratory operation in 1931. The right testicle was removed six months ago. The patient has had persistent edema of the scrotum and right thigh since his illness in 1926. It is gradually becoming worse. Formerly it would subside overnight, while he was in bed. Since the removal of the testicle he has had more edema of the leg. He has noticed small white spots on the scrotum and thigh. On several occasions these have broken, resulting in a flow of watery material, on one occasion enough to wet a small towel. Dermatologically the patient presents a scar resulting from a lower right rectus incision, another on the right buttock and a third in the right groin, extending down the scrotum. Naevus flammeus involves the right buttock, the right side of the scrotum and the penis. There is edema of the right side of the scrotum. The skin is thickened, and there are several vesicle-like lesions which disappear on pressure and when the patient is reclining. The right thigh is larger than the left. Dilated lymphatic vessels can be seen in the upper part of the thigh. Medical examination and serologic tests of the blood for syphilis showed no abnormality. Histologic studies showed chronic epididymitis and a partially atrophic testicle. The patient received roentgen rays to the scrotum and the upper part of the thigh in November 1937 and January 1938.

DISCUSSION

DR. JOHN H. STOKES: This man's right breast feels as if it might contain mammary tissue, and there is a decidedly feminine pituitary contour. I recall seeing at one time a rather startling change in a young man; an attack of encephalitis had resulted in the development of feminine characteristics and rather large—in fact, almost pendulous—breasts. After the fever of unknown cause this young man may conceivably have undergone something of that sort. I should like to ask if he shows any personality changes and what sort of person he is for his age and station. His condition is a not uncommon accompaniment of nevus. An extensive hemangioma can produce some rather surprising changes in bone and other structures. From the waist down, at least, his condition is not out of keeping with what one might expect of an extensive lymphangiomatous process.

DR. FRED D. WEIDMAN: When the patient stood up, one could see that the fluid in these vessels was milky or yellowish white—in other words, chylous and not the ordinary clear serum one expects in lymphangiectasia. In a case of this sort it is questionable whether this milky fluid is part of a spermatocele. On the other hand, there are some little fine white lines on the skin on the inside of the thigh, 5 or 6 cm. away from the scrotum. I think in a case of this sort one of the first lines of approach is an examination of the fluid. In some cases it is truly chyle, simply emulsified (digestive) fat, and in others chyliform, which means that the color is due to the association of degenerative albuminous and fatty material with tuberculosis and to neoplasm of the abdominal cavity. In pseudochylous ascites the turbidity is due to albuminous substances only; fat is absent.

A Case for Diagnosis (Osteoma Cutis?). Presented by DR. THOMAS BUTTERWORTH, Reading, Pa.

G. S., a white woman aged 29, states that a red sore area developed on the right hip six years ago. There was no antecedent trauma. About six months later she noticed a definite hardness in the region involved. In July 1937 a sinus developed, and since that time, the patient believes, the mass has been getting smaller. She now presents a large dry scaly erythematous patch on the right hip, in the center of which there is a discharging sinus. Beneath the sinus is an elongated freely movable hard platelike mass. The skin in general is dry and flaky. She has had naevus flammeus on the right side of the neck since birth. She had infantile paralysis at the age of 16 months, influenza at 10 years, chickenpox at 12 years and measles at 19. She had two corrective operations on the right foot and the upper part of the right thigh at the age of 10 years. The patient has applied many salves and alcohol over and about the hard mass; this medication probably accounts for some of the dermatitis.

DISCUSSION

DR. JOHN H. STOKES: Actual formation of bone is entirely possible in a situation like that. The area feels much more like bone than calcification to me. The hardness is not gritty and stony but slightly elastic, a little more suggestive of bone or cartilage. Trauma will cause bone formation sometimes in fatty tissue.

NOTE.—The entire mass was subsequently excised surgically and submitted to Dr. Weidman for study. Pathologic examination of the specimen showed the sinus to be superficial, not extending more than 5 mm. into the lesion. It was situated close to a focus of soft faintly brown gelatinous material which measured 8 by 10 mm. and had a ragged indefinite outline. There were no additional foci elsewhere in the specimen.

Histologically the epidermis was thin and gave evidence of definite pressure atrophy. The corium was enormously thickened (20 mm.). The collagenous architecture was largely destroyed and replaced more or less by a delicately fibrillar stroma. From place to place this was either diffusely or focally infiltrated by lymphocytes and plasma cells, associated with localized aggregations of hyperplastic blood vessels. Miliary abscesses occurred sparingly from place to place in the section. They were most common adjacent to the calcareous masses but did not occur independent of them, when they contained a great mass of fibrin in addition to the polymorphonuclears. They were not invested by a fibrous wall. The giant cells were small and widely scattered.

Calcification was the most conspicuous feature in the entire section. It appeared in the form of great numbers of widely distributed sharply circumscribed masses and occurred almost exclusively within areas of collagenous tissue. However, at one place it was seen to be located in an epidermal depression, which strongly suggested that it had originated in a follicle. The wall of this calcareous "cyst" was lacking at one place, and just there one of the miliary abscesses appeared. There was no evidence of true ossification in the calcareous masses.

None of the glandular appendages could be identified, but at least one strand of involuntary muscle could be recognized.

The histologic diagnosis was subacute suppurative folliculitis and panniculitis with calcification.

Tinea Capitis with Trichophytid. Presented by DR. BERTRAM SHAFFER (by invitation).

S. R., a Negro aged 9 years, presents a pustular crusted and scaling eruption of the scalp in areas of partial alopecia. On the face, neck, back and upper extremities there is a follicular eruption. Many of the follicles are grouped into definite patches. The eruption began in December 1937 as a scaling and itching patchy alopecia of the scalp. The patient visited the clinic on Jan. 7, 1938, and was given an ointment containing 12 per cent iodine crystals in hydrous wool fat. When he was seen a month later, the eruption on the scalp was pustular and crusted, and there was a follicular eruption on the face, neck, chest, back and arms. The ointment was discontinued, and by Feb. 25, 1938, the follicular eruption had disappeared and most of the pustular involvement of the scalp was gone. He was again told to use the iodine ointment, after which the follicular and pustular processes recurred. Preparations of the lesions in potassium hydroxide revealed characteristic spores. The Wassermann reaction was negative.

DISCUSSION

DR. FRED D. WEIDMAN: Far back in the ancient history of the treatment of ringworm of the scalp, the French used croton oil and pure phenol in just the way recently rediscovered for treatment of artificial kerion. It is an adage that the factors most likely to provoke trichophytid are strongly stimulating agencies. This condition is the original type of trichophytid described, the kind that develops over the shoulders after roentgen treatment, harsh handling, traumatism or the application of strong medicaments therapeutically.

Kaposi's Sarcoma in a Negro. Presented by DR. VAUGHN C. GARNER.

R. B., a Negro aged 54, presents discrete and confluent deeply pigmented nodules and plaques over all four extremities, with elephantiasic changes in the feet and a deep purplish lividity of the hands. There are a few scattered lesions on the back and constricting annular scarring of the ankles. The cutaneous lesions had their onset four years ago, with swelling of the legs and evidence of cardiac insufficiency during the past two years. Medical examination shows a diastolic murmur at the base and a systolic one at the apex of the heart. The blood pressure is 138 systolic and 80 diastolic. The liver is palpable. There is generalized lymphadenopathy. Urinalysis showed a trace of albumin. The sugar content of the blood was 83 mg. and the urea nitrogen content 18 mg. per hundred cubic centimeters. Two blood counts were normal. The Wassermann reaction was negative. A roentgenogram of the chest showed "large globular heart, enlarged to the left, and mottled infiltration throughout both lungs." The electrocardiogram showed left ventricular preponderance and T waves suggestive of coronary disease. The histologic examination was compatible with the diagnosis of Kaposi's sarcoma.

DISCUSSION

DR. ROBERT L. GILMAN: Offhand, I do not see any inherent reason why Kaposi's sarcoma might not be found in a Negro. Possibly it may have been overlooked in the past because the color changes, which are striking in the white man, have been missed in the Negro. In connection with Dr. Julius Dorffel's cases (ARCH. DERMAT. & SYPH. **26**:608 [Oct.] 1932), unless the author went into the literature thoroughly his material included only the cases of Kaposi's sarcoma at the Mayo Clinic and in his own province of East Prussia, where he probably would not have had access to cases of Negroes if they did exist.

DR. FRANK C. KNOWLES: In the two articles by Howard Fox on cutaneous diseases of the Negro and the one by Hazen on the same subject, I do not recall having seen a report of a case of Kaposi's sarcoma in the Negro.

DR. VAUGHN C. GARNER: Dr. Gilman's statement is perfectly true, although Dr. Dorffel's bibliography listed cases distributed throughout the world.

Dermatitis Herpetiformis. Presented by DR. DONALD M. PILLSBURY.

L. R., a white child aged 2½ years, presents grouped, pustular and scaling lesions on the leg and grouped hyperpigmented macules on the arms, trunk and legs. At their onset the lesions always are clearly vesicular; then they become pustular. The condition had its onset with an acute infection of the upper part of the respiratory tract in January 1937. There was complete subsidence during the summer of 1937. The only abnormality was enlarged infected tonsils. Mantoux tests with old tuberculin gave negative results, as did the Wassermann test and a patch test with a 20 per cent solution of potassium iodide. The blood count was within normal limits, with from 2 to 6 per cent eosinophils. Cultures of material from vesicles revealed hemolytic streptococcus and Staphylococcus aureus. Intradermal tests with the recovered organisms gave only slightly positive results. The patient received sulfanilamide, with no benefit. Administration of solution of potassium arsenite and roentgen and ultraviolet therapy were effective. The patient is at present receiving small doses of potassium iodide in an attempt at desensitization.

DISCUSSION

DR. H. J. SMITH: I saw this child about a year ago, when he had a typical attack of dermatitis herpetiformis.

DR. FRANK C. KNOWLES: I think this case is instructive because of the different types of lesions which may be classified under Duhring's disease. Looking at the patient tonight, I do not believe any one would think of that diagnosis.

DR. DONALD M. PILLSBURY: There is a recent report in the German literature on dermatitis herpetiformis of an attempt to desensitize persons to iodide, and though I have not demonstrated that this patient is sensitive to iodide, as most patients with this disease are, I have started giving him ⅛ grain (0.008 Gm.) three times a day.

Papulonecrotic Tuberculid. Presented by DR. ROBERT L. GILMAN.

B. R., a white woman aged 23, presents a dermatitis of at least eight years' duration, distributed mainly on the extremities, i. e., the elbows, knees, heels and toes. Inflammatory and ruptured bullous lesions are seen on the left knee, both the heels and the toes. Other lesions are older, punched-out ulcers and clearcut scars. There is no activity at the present time on the elbows. There are no other cases in her family. She has never received any successful treatment. She occasionally uses ammoniated mercury ointment. The mouth is clear and the finger nails unaffected. She thinks the condition is better in the summer, with fewer lesions. Although the lesions occur at points of possible frequent trauma, she has not associated them with accidents.

DISCUSSION

DR. EDWARD F. CORSON: This condition seems to me like papulonecrotic tuberculid. The patient said that while the lesions on her feet were bullous, the others started as hard lumps, which broke down and had a hard central core. This, together with the type of scarring, which is not exactly that of epidermolysis bullosa, with a thin superficial reddish scar, seems to fit more into the picture of papulonecrotic tuberculid.

DR. JOHN H. STOKES: I am going to subscribe heartily to the diagnosis of papulonecrotic tuberculid. After a dermatologist has observed a good many cases, he gets to recognize a particular type of papulonecrotic tuberculid, especially in women, which produces this characteristic scarring on the elbows and knees. The lesions on the toes are compatible with that diagnosis too. They are bullous occasionally. There are two types of tuberculid: that which comes through central necrosis and that which fails of central necrosis. There is a characteristic thornlike sticking pain on pressure, so severe that a sudden tap on one of the lesions will bring a scream from the patient.

Two Cases for Diagnosis (Multiple Benign Cystic Epithelioma? Adenoma Sebaceum? in Mother and Daughter). Presented by DR. HARRY PENNIS PARISER.

CASE 1.—M. H., a white woman aged 41, presents numerous translucent nodular lesions varying in size from that of a pinhead to that of a pea, about the nasolabial folds, the chin, the nose, the eyelids and the forehead near the hair line and behind the right ear. They are cystic, but no fluid can be expressed from them. Several lesions show telangiectatic vessels on their surface, particularly the largest one, which is about the size of a small nodule and soft to the touch. There is no tenderness, and diascopic pressure reveals translucent nodules. The condition had its onset when the patient was 22, as a small nodule on the left side of the nose. This nodule grew, and others made their appearance over a period of two or three years. No other lesions have appeared since that time. This patient is the mother of H. H. (to be presented). Medical examination showed no abnormality except enlarged septic tonsils. Ointments have been applied, with no benefit.

CASE 2.—H. H., a white girl aged 7 years, the daughter of M. H., presents fleshy nodules varying in size from that of a pinhead to that of a pea and extending across the forehead below the hair line, about the ala nasi and below the right nostril. The epithelium is smooth and the surface translucent, with slight telangiectasia of some of the lesions. Diascopic pressure shows them to be white and

translucent. Nothing can be expressed from the lesions by pressure. The condition had its onset about a year ago, with a nodule below the right nostril. Medical examination showed no abnormality except inflamed tonsils. Ointments have been applied, with no benefit.

DISCUSSION

DR. J. M. SCHILDKRAUT, Trenton, N. J.: I saw this patient in my office in March 1932 and made a tentative diagnosis of multiple benign cystic epithelioma. Now that the daughter has it, I am convinced that that is the proper diagnosis. The condition is hereditary in certain instances.

Acne on a Seborrheic Background (Acnitis?). Presented by DR. CARMEN CHRISTINE THOMAS, Wilmington, Del. (by invitation).

M. L., a white woman aged 20, first noted an acneform eruption of the face at the age of 14. She now presents grade 3 seborrhea of the scalp and face, which shows numerous comedos and papulopustules, especially on the cheeks. A tuberculin test and the Kolmer, Kahn and Kline tests gave negative results. There is considerable rosaceal flush of the forehead and cheeks. She was given the usual regimen for acne and roentgen irradiation to a total of 400 r to the front and 850 to the sides of the face during four months. Active lesions ceased to develop, but red scars containing small, granular nodules in their central pits remained. Sodium gold thiosulfate to a total of 300 mg. was given, and within three months all lesions were flat, smooth and inactive; they have remained so to date.

DISCUSSION

DR. JOHN H. STOKES: I think that this condition falls clinically into the group described by Cleveland White in which an allergic factor produces an acne-like eruption which lacks the characteristics of conventional acne—namely, comedos and facial cysts—and which is markedly dependent on ingestants to which the patient reacts allergically. The susceptibility is sometimes difficult to detect, but it will be found in nearly all cases that the patient cannot take chocolate. I asked this woman particularly about chocolate, but she said she had never noticed any relationship. The patients are frequently abused with roentgen rays. They are more apt to be adult women than adolescents, and chocolate and milk are the two principal offenders in their allergic backgrounds, so far as one can determine by dietary exclusion. Another thing: It is time some one wrote up the nonspecificity of sodium gold thiosulfate. The disposition to use it in testing for tuberculous processes is apt to lead one into serious mistakes.

Peripheral Neuritis; Trophic Ulcer; Calcification of the Ears. Presented by DR. JOHN B. LUDY and DR. PATRICIA DRANT.

N. M., a white man aged 62, states that five years ago an ulcer developed on the ventral surface of the left great toe; this was associated with mild pain in the other toes. A year later a similar ulcer appeared on the right foot. In June 1936 he noticed clonic movements of the legs at night, and at the same time paresthesia of the legs developed. Ten years ago his ears became hard and cracked on manipulation. He maintains that they were never frozen or traumatized. There have been no nervous or mental diseases, tuberculosis or alcoholism. He sustained fracture of both legs in 1919. He underwent appendectomy in 1936. He is the father of 5 healthy children. Dermatologically he presents ruddiness of the face, excessive sweating of the feet and legs and a healed ulcer of each first toe. The auricles are of stonelike consistency. They are increased in thickness, but not tender. The lobes appear to be normal. Medical examination showed dental caries and an emphysematous chest, with occasional coarse rales at the base and the hilus of the lungs. The patellar reflexes are slightly exaggerated. The Achilles reflex is absent. The Romberg test gave a negative result. There

are glove and stocking anesthesia and a tremor of the hands. Serologic examination of the blood and of the spinal fluid gave negative results. Urinalysis and a blood count showed no deviation from normal limits. The total protein content of the plasma was 8 mg. per hundred cubic centimeters (albumin 5.2 and globulin 2.8). The sugar content of the blood was 178 mg. on Feb. 2, 1938, and 89 mg. on Feb. 5, 1938. Diathermy has been given to the feet and legs, and vitamins B and C administered internally.

DISCUSSION

DR. JOHN H. STOKES: I should give the patient a little colchicum—treat him for gout. I should also see what I could pick out of that ear.

FRANK C. KNOWLES, M.D., *Chairman*

April 22, 1938

THOMAS BUTTERWORTH, M.D., *Secretary*

Essential Shriveling of the Conjunctiva (Ocular Pemphigus); Pemphigus of the Mucous Membranes. Presented by DR. JOSEPH V. KLAUDER.

M. G., a white woman aged 58, was shown at the Atlantic Dermatologic Conference on Dec. 11, 1937 (ARCH. DERMAT. & SYPH. **38**:151 [July] 1938). She is shown now on account of possible improvement following gold and bismuth therapy. Since October 1937 she has received alternating courses of sodium gold thiosulfate, 50 mg. per dose, intravenously and of bismuth subsalicylate in oil, 2.5 cc., intramuscularly. For three months no new vesicles have appeared in the mouth, and the erosive areas have disappeared. She states that this period of freedom from vesicles is unusual, as vesicles have previously appeared in the mouth at daily to weekly intervals for fifteen years. She has never had any cutaneous involvement.

DISCUSSION

DR. DONALD M. PILLSBURY: I think there is no question of the improvement in this case since the patient was last presented.

Essential Shriveling of the Conjunctiva (Ocular Pemphigus); Pemphigus of the Mucous Membranes. Presented by DR. JOSEPH V. KLAUDER.

A. R., a white woman aged 68, has had trouble with her right eye for two years. The right cornea is hazy with new blood vessels. Vision in the right eye is limited to perception of light. There is adhesion of the conjunctiva of both lids to the bulbar conjunctiva. This is so pronounced that only half of the cornea can be seen. Movement of the eyeball is therefore considerably restricted. The left cornea is clear, and the vision in this eye is 6/30. The cul-de-sacs are obliterated. There is union of both palpebral conjunctivas with the conjunctiva of the bulb; this is much less pronounced, however, than in the right eye. There is partial obliteration of the left nasopharynx. The anal and the vulvar mucosa are normal. There has never been any involvement of the skin.

Essential Shriveling of the Conjunctiva (Ocular Pemphigus); Pemphigus of the Mucous Membranes. Presented by DR. JOSEPH V. KLAUDER.

R. H., a white youth aged 21, is unable to state exactly when the present condition started, but he has had ocular trouble since the age of 4 years. The right cornea is clear. There is adhesion of the conjunctiva of the lower lid to the bulbar conjunctiva, obliterating the cul-de-sac. The upper cul-de-sac is narrowed;

there is no adhesion of the conjunctiva of the upper lid to the bulbar conjunctiva. The left cornea also is clear, and there is no involvement of the conjunctiva. The cul-de-sacs are, however, narrowed. The vision is unimpaired. There is no involvement of the mucous membranes of the nose, mouth, throat, urethra or anus. There has never been any cutaneous involvement.

DISCUSSION

DR. ERICH URBACH, Vienna, Germany (by invitation): Pemphigus in the United States is often unlike that in Europe. I have had the good fortune to observe 70 cases of pemphigus in the last ten years. In my opinion pemphigus of the mucous membrane often exists for one, two or three years and then suddenly, without any apparent cause, breaks out over the whole body. I believe pemphigus of the mucous membranes is identical with pemphigus of the skin. It is only another stage. I know that investigations with the pemphigus virus are not made in every country, but I believe the future will show, with the aid of this method, that both types are always the same. With serum from the bullae of patients, with pemphigus or dermatitis herpetiformis animals can be infected, and the disease can be transmitted from one animal to another. The members of the clinic in Erlangen, Germany, were able to cultivate the pemphigus virus in the allantois of a chicken. I believe that in years to come there will be a method of distinguishing whether a bullous disease is in reality pemphigus.

DR. VAUGHN C. GARNER: Is there anything in common between what used to be known under the name of symblepharon and this essential shriveling of the conjunctiva?

DR. JOSEPH V. KLAUDER: Of course the patients all have symblepharon. No other condition of the eyes looks like this. Trachoma may simulate it in the latest stages, but even then there are some points of differentiation. The boy is the youngest victim of this disease that I have ever seen. So far as I have reviewed the literature, he is one of the youngest reported. I believe the proper term for this condition is pemphigus of the mucous membranes, of which so-called ocular pemphigus is one phase. Essential shriveling of the conjunctiva is synonymous with ocular pemphigus. The pemphigus part of the name is a misnomer. I see no relation whatever to pemphigus as it is known on the skin. Perhaps the origin of that designation may be traced back to the older writers, who called almost every vesicular or bullous lesion pemphigus. This condition, as I visualize it, is essentially a disease of mucous membranes. In my series I have never seen any cutaneous lesions. The vesicular phase of it, I think, is rarely seen. The process is essentially a shriveling of some or all of the mucous membranes; in addition to the conjunctiva other surfaces were involved in 2 of the 3 cases presented this evening. The 68 year old woman almost has atresia of the nasopharynx. The other woman is the only one that has shown involvement of all the mucous membranes. I am treating all the patients with bismuth and gold preparations, a procedure based on the following observation: When I first saw the woman with the involvement of all mucous membranes, I thought she had lupus erythematosus of the conjunctiva. I was led into making that diagnosis because the outstanding cutaneous symptom was lupus erythematosus of the scalp. Further observation over eight years changed my opinion. Because I thought the ocular condition was lupus erythematosus, which she did have on the scalp, I gave her a gold preparation, with some improvement. I resumed that medication when she again visited the clinic after a lapse of from seven to eight years, with the result that she has not had vesicles for some three or four months, which is unusual. The appearance of the mouth is better. I do not believe the condition is rare. My associates and I are beginning to see it rather frequently at the Wills Hospital. I think ophthalmologists see it much more frequently than dermatologists do. The prognosis is bad. The condition leads to clouding of the cornea, atresia, immobility of the eyeball and blindness.

Recurring Herpes Simplex. Presented by Dr. Elmer R. Gross, Wilmington, Del.

C. D., a white girl aged 7 years, has had recurrent herpes simplex at the right external canthus every three months from the age of 2 years. She was vaccinated for smallpox at the age of 3 years. In October 1937 she had typical herpes simplex. Fluid was withdrawn from the vesicles and injected intracutaneously into the right arm. Four days later four vesicles developed at this site. Fluid was withdrawn from these and injected into the left arm. No more vesicles developed. She has been free of herpes simplex for six months.

DISCUSSION

Dr. Donald M. Pillsbury: I have not seen good results from autoinoculation. There is, however, one theoretic bad result. It has been shown that herpetic lesions may occur at the site of inoculation later on. I have observed at least 2 cases in which I believe smallpox virus was helpful.

Dr. Joseph V. Klauder: In a few cases I think I have had successful results from treatment with antismallpox vaccination. In those cases there was always a take.

Dr. Sigmund S. Greenbaum: It is interesting to note that this child had been vaccinated at the age of 3 years. Does the vaccinia take again in these cases?

Dr. Joseph V. Klauder: It does not, once you get the reaction. It should be worth while studying the incidence among patients with herpes simplex of a positive take.

Dr. Vaughn C. Garner: In a series of at least 8 or 10 patients I have succeeded in stopping the recurrent fixed type of herpes simplex with small doses of roentgen rays, in a total of about four to six treatments.

Dr. Donald M. Pillsbury: I never had any success with roentgen therapy.

Dr. Thomas Butterworth, Reading, Pa.: I generally use a combination of the two—vaccinate the patient and give ¼ skin unit of roentgen rays weekly for six weeks. I think I have good results.

Dr. Frank C. Knowles: I think roentgen rays are effective.

Intertriginous Dermatitis (Moniliasis?). Presented by Dr. Elmer R. Gross, Wilmington, Del.

M. R., a white woman aged 56, presents an erythematous scaly eruption involving the right submammary region, the umbilicus, the left axilla and the pubic region. The process is of several years' duration and is usually worse in summer. The itching disturbs her sleep. She has never been entirely free of her dermatitis. She has been treated for diabetes mellitus for the past eight years.

DISCUSSION

Dr. Sigmund S. Greenbaum: I should like to offer an alternative diagnosis, of psoriasis.

Dr. Donald M. Pillsbury: I have recently observed a case in which the condition in the beginning resembled this one and later developed into psoriasis, which was proved histologically. I think it is worth while to keep that diagnosis in mind in considering the prognosis.

Interstitial Keratitis (Poor Result Despite Continuous and Intensive Treatment). Presented by Dr. Joseph V. Klauder.

J. W., a white man aged 26, was first seen in April 1936, with interstitial keratitis of the right eye of seven weeks' duration. He had had no previous treatment for his syphilis. Vision at that time was limited to perception of hand movements on the right and was 6/6 on the left. Between April 1936 and October

1937 he received continuous treatment, consisting of thirty-eight injections of a bismuth preparation, thirty injections of 0.6 Gm. of neoarsphenamine and twenty intravenous injections of typhoid vaccine. In October 1937 the second eye became involved. He then received malaria therapy and treatment with arsphenamine and mapharsen. Despite all treatment, the final result is poor. There is leukoma on both sides. Vision in both eyes is now 1/60. The Wassermann reaction is strongly positive.

DISCUSSION

DR. ERICH URBACH, Vienna, Germany (by invitation): I am sorry to say that I have had little success in the treatment of interstitial keratitis. Antisyphilitic treatment in large or small amounts is without effect. The interstitial keratitis is probably not the consequence of syphilitic infection but of an allergic reaction either to spirochetes themselves in the cornea (Igersheimer) or to endoallergens of the spirochetes (Schieck-Riehm).

DR. HENRY B. DECKER, Camden, N. J.: I think that fever therapy offers the best hope for treatment. Sometimes it does not work, but I think it has greater value than the usual metallic therapy.

DR. DONALD M. PILLSBURY: Our experience with acetarsone in interstitial keratitis has been discouraging. It is not effective.

DR. JOSEPH V. KLAUDER: This type of case is responsible for the thought that interstitial keratitis is not a syphilitic process—at least, not entirely. I subscribe to this theory. It is not 100 per cent syphilitic. If it were, conditions of this sort would not be seen. The appearance of new syphilitic lesions following antisyphilitic treatment is unique in the whole domain of syphilis, except in cases of Wassermann-fast or arsenic-resistant disease. I believe that antisyphilitic therapy is certainly not the last word in the treatment of interstitial keratitis.

Acrodermatitis Chronica Atrophicans. Presented by DR. HOWARD EARLE TWINING.

F. S., a white woman aged 43, states that a dusky purplish erythema developed on the right elbow eight months ago; this has gradually spread to the hands, chest, arms and left elbow. The patient is robust and now shows rather ill defined dusky purplish red areas over both hands, the elbows, the upper parts of the arms and the chest and subcutaneous nodules of both elbows. She has been given 30 grains (1.94 Gm.) of calcium lactate three times a day.

DISCUSSION

DR. JOSEPH V. KLAUDER: It is interesting to note the possible relation of the nodules to the cutaneous lesions. I wonder, too, if there is sufficient atrophy to justify considering acrodermatitis chronica atrophicans. Another possibility is lupus pernio; some of the features of that condition are present.

DR. ERICH URBACH, Vienna, Germany (by invitation): Dr. Moritz Oppenheim has presented many cases of a condition similar to this. I am sure this is acrodermatitis, but of a peculiar type.

Radiodermatitis Following Treatment for Hypertrichosis. Presented by DR. CARMEN CHRISTINE THOMAS, Wilmington, Del. (by invitation).

B. H., a white woman aged 29, went to a "cosmetic institute" for mild hypertrichosis of the upper lip and the chin. She was given a roentgen treatment every two weeks for over two years. The edges of the lips have been somewhat roughened and burning for about three months. There are wrinkling, puckering and slight hyperpigmentation of the skin of the upper lip and the chin, with definite telangiectasia about the chin and submental region. The edge of the vermilion border of the lips is somewhat roughened and slightly scaly. There is a linear keloidal scar across the lower part of the chin. An ointment containing quinine and phenyl salicylate has been prescribed for protection against sunlight.

DISCUSSION

DR. FRANK C. KNOWLES: This case reminds me of one of the most terrible cases of this type that I ever observed. The patient had been treated at a beauty parlor for removal of hairs from the arms with a tube which the operators asserted did not give off roentgen rays but evidently did. Telangiectasia developed, followed by carcinoma of the forearms, and eventually both arms had to be amputated at the shoulder.

DR. DONALD M. PILLSBURY: About three years ago I had my secretary call the aforementioned institute and ask specifically if "x-rays" were used and the operator replied: "No; filtered roentgen rays."

DR. SIGMUND S. GREENBAUM: This is the second case in which I have seen damage produced by the same cosmetician. In the other there was not only a telangiectatic type of radiodermatitis but marked xerostomia; the patient could not open her mouth without a good many fissures developing from the cracking of the dried-out mucous membranes. Eight or nine months after the treatment was stopped the salivary secretion was partially reestablished.

Circumscribed Myxedema (Postoperative). Presented by DR. VAUGHN C. GARNER.

W. E., a white man aged 48, had hyperthyroidism in 1937, his basal metabolic rate being +50 per cent. He underwent thyroidectomy in July 1937. For the past six or seven weeks he has had edema and discoloration of the upper eyelids and edematous plaques 6 to 8 inches (15 to 20 cm.) long on the outer aspects of both legs. A recent examination by the surgeon who performed the thyroidectomy showed his condition to be normal; the basal metabolic rate was +6 per cent.

DISCUSSION

DR. ERICH URBACH, Vienna, Germany (by invitation): I believe it is advisable to treat local myxedema with local iodine iontophoresis. I have seen good results with this method in some cases.

DR. DONALD M. PILLSBURY: Some years ago Dr. Stokes and I reported a series of cases of circumscribed myxedema and collected those reported in the literature (ARCH. DERMAT. & SYPH. **24**:255 [Aug.] 1931). Many patients did not have hypothyroidism at the time the lesions were noted. Although the lesions on the eyelids came on at the same time, they were certainly not myxedematous. There was no fleshy feel to them, and when we looked at them for the first time we thought of neurodermatitis. The lesions on the legs, of course, were entirely characteristic.

A Case for Diagnosis. Presented by DR. ELMER R. GROSS, Wilmington, Del., and DR. JOSEPH V. KLAUDER.

H. S., a white man aged 48, states that an eruption developed in the spring of 1937. He now presents bright red confluent lesions on the extensor surfaces of the forearms; these are covered with a thick adherent oystershell whitish scale, which lacks entirely the mica-like appearance of a psoriatic scale. There are bright red areas over the extensor surfaces of the phalanges. On both hypothenar eminences there are discoid purplish red areas with a circinate scaly area in the center. On the sides of the neck there are purplish red flat papules devoid of scales. On the upper lip there is a purplish red area with a fine adherent scale. Urinalysis showed no abnormality. The histologic diagnosis (Dr. Weidman) was lichen planus.

DISCUSSION

DR. ERICH URBACH, Vienna, Germany (by invitation): This picture is excellent. The patient also has lesions of lichen planus on the right buccal mucosa.

DR. JOSEPH V. KLAUDER: I carefully examined the man's mouth, and I could find no evidence of lichen planus. I did not use a glass, and I am anxious to examine him again. Perhaps I missed the lesions. It is remarkable how a condition can look like psoriasis and lichen planus and have some characteristics of lupus erythematosus. If it is lichen planus, I think it is a remarkable example. The lesions are highly inflammatory. Acute lichen planus exists, but it is acute because of its diffuseness, not because of inflammation. I could see in this man only one lesion suggestive of lichen planus. There is certainly no lichenification.

DR. EDWARD F. CORSON: I believe the condition is lupus erythematosus. There is a rather extensive eruption on the nose in addition to those already mentioned. As to the eruption in the mouth, it does not seem to me to be characteristic of lichen planus. There is a whiteness that might be beginning leukoplakia; the man is a heavy smoker. The lower part of the eruption on the arms is rather verrucous. There is certainly a hypertrophic tendency, but it does not look like the type seen in lichen planus. The upper part of the eruption stopped just at the level where the patient is no longer protected from the sunlight by his shirt sleeves. He is a man doing a certain amount of outdoor work, and the eruption was on the extensor surfaces rather than the flexor. I subscribe to Dr. Klauder's third diagnosis.

DR. W. O. ROOP, Atlantic City, N. J.: My first impression was that the condition is lupus erythematosus. Were lichen planus so extensive as this, one would expect some penile lesions also; there are none. I should like to ask the presenter whether there has been any gold therapy; if not, I think it would be wise to try it, on the assumption that the condition is lupus erythematosus.

DR. JOSEPH V. KLAUDER: This case brings up again that interesting axiom from Hutchinson: If the laboratory and the clinical evidence do not agree, the case should be tried over again. It is interesting how laboratory examination may be helpful and at the same time misleading.

DR. SIGMUND S. GREENBAUM: I agree with Dr. Weidman's diagnosis of lichen planus. The histologic picture is so distinctive that it simply cannot be mistaken. The lesions on the lip of this patient, which consist of erythematous spots and a grayish scale, look like lichen planus or lupus erythematosus. I did not look into his mouth at first; then he took his teeth out, and on the right buccal mucous membrane there was a beautiful filigree network.

Lupus Erythematosus with Exudative Retinitis. Presented by DR. ELMER R. GROSS, Wilmington, Del., and DR. JOSEPH V. KLAUDER.

E. D., a white man aged 36, exhibits on each side of the face and on the forehead bright red areas ranging in size from that of a dime to that of half a dollar. Some are infiltrated; all are devoid of scales. The scalp and mucous membranes are not involved. Ophthalmoscopic examination reveals, on the right, scattered throughout the fundus, particularly around the disk, various-sized irregular fluffy cloudlike patches. There are three small fresh hemorrhages around the macula. The picture on the left is the same, but not so extensive. Vision in both eyes is 3/60. Three months ago the patient had chills, fever, general malaise and weakness, which necessitated rest in bed. About that time an eruption developed on the face. A month ago he noticed blurring of vision. He has not worked since Jan. 1, 1938, because of progressive weakness and loss of 23 pounds (10.4 Kg.). There is no history of tuberculosis; he has always been underweight but in good general health. The Mantoux test gave negative results with three dilutions. Roentgenograms of the lungs showed no abnormality, and examination of the sputum showed no tubercle bacilli. Urinalysis showed no abnormality, and the Wassermann reaction was negative. Chemical examination of the blood showed 71.7 mg. of sugar, 13.6 mg. of urea and 3.1 mg. of uric acid per hundred cubic centimeters. A complete blood count on March 26, 1938, showed 4,640,000 red blood cells and 3,400 white blood cells, with 46 per cent polymorphonuclears, 1 per

cent eosinophils, 45 per cent lymphocytes and 8 per cent monocytes. On April 1, the white blood cells numbered 6,200, and on April 4, 8,300. Histologic examination showed subacute diffuse dermatitis and atrophy of the epidermis, with local hyperplasia.

DISCUSSION

DR. JOSEPH V. KLAUDER: This is the first time that I recall seeing changes in the fundi associated with lupus erythematosus. Perhaps they have been missed. After this I shall examine the fundi of patients with acute lupus erythematosus. I think it is reasonable to ascribe the changes to the same cause. Our original diagnosis was sarcoid of Boeck. It was not confirmed by histologic examination, and I was asked if the condition could be lupus erythematosus. The section suggested that more than anything else.

A Case for Diagnosis (Rosacea? Recurrent Dermatitis of the Face and Hands? Light Sensitivity? Pellagrinous Dermatitis?). Presented by DR. DONALD M. PILLSBURY.

M. G., a white woman aged 26, exhibits moderate dermatitis of the "rosacea" portions of the face and persistent dry exfoliative dermatitis of the lower portion of the nose. There is dry patchy dermatitis of the backs of the hands. The condition had its onset thirteen years ago and recurs principally in the spring. She was entirely free while in Iowa two years ago. The recurrences are often explosive, with marked swelling and oozing. There is always some rosacea. A sister has hives and a paternal uncle hay fever. The general examination showed no essential abnormality. There is moderate arterial hypertension, the blood pressure being 154 systolic and 104 diastolic. A complete allergic study revealed a number of sensitivities, but avoidance of the foods concerned has produced no improvement. Infected tonsils were removed one year ago.

Treatment.—The skin of the face is intolerant to most standard preparations. It is usually worse after exposure to sunlight or ultraviolet rays. She has had considerable roentgen irradiation, without relief. Administration of synergen and of sodium gold thiosulfate were ineffective. Ultraviolet irradiation (to the body in gradually increasing doses), intravenous administration of vitamin C and the use of diluted hydrochloric acid have been helpful.

DISCUSSION

DR. W. O. ROOP, Atlantic City, N. J.: The skin on this girl's face appears dry, scaly and somewhat atrophic. The possibility of radiodermatitis occurred to me. She gives a history of considerable roentgen therapy, and I think that possibility must be considered. Another possibility is that of lupus erythematosus.

DR. JOSEPH V. KLAUDER: I thought of the possibility of pollen dermatitis. The eruption appears in the spring on the exposed parts of the body. She has no fever. It disappeared when she left this part of the country. Of course, Dr. Pillsbury has probably gone into that.

DR. DONALD M. PILLSBURY: She reacted to short ragweed; that was the only pollen. The attacks occur at various times of the year; she has had outbreaks in the winter. During her period of freedom she was in Iowa, and there is a good deal of ragweed there. I present her because the condition has been so resistant to treatment. Hydrochloric acid demonstrably diminishes the redness of her face, which becomes very flushed when she is not taking it. I have not had a gastric analysis made.

A Case for Diagnosis. Presented by DR. HOWARD EARLE TWINING.

J. K., a white youth aged 17, presents papillomatous granulomas of both groins, with rather deep fissures. Similar growths are present on either side of the rectum, and there are a few pustular scaly lesions in the suprapubic region.

The patient had diphtheria at the age of 5 years, but there is no history of penile involvement. The inguinal glands became swollen a year ago and broke down six months later, with a mucopurulent discharge. His hearing became defective six months ago, and he is now stone deaf. He has lost 20 pounds (9.1 Kg.). He is beginning to complain of an intense thirst, having to rise to drink four or five times at night. Within the last few days he has begun to suffer severe pain extending down the right leg. The heart is enlarged and rapid, with a regular rhythm and a loud systolic murmur. The temperature ranges between 99 and 102 F. A blood count showed 91 per cent hemoglobin, 4,600,000 erythrocytes and 9,100 leukocytes; the differential count was within normal limits. The Wassermann and the Kahn test and examinations of the spinal fluid were negative. Chemical analysis of the blood showed 9 mg. of urea nitrogen, 75 mg. of sugar and 66 mg. of chlorides (plasma) per hundred cubic centimeters; the carbon dioxide-combining power of the plasma was 61 cc. per hundred cubic centimeters, and the basal metabolic rate —9 per cent. Urinalysis showed no abnormality. Histologically there is a reticuloendothelial "tumor," which may be xanthomatous; to decide whether it is truly neoplastic or a leukotic reticuloendotheliosis would need further study. Application of potassium permanganate compresses for two weeks failed to bring about improvement.

DISCUSSION

DR. JOSEPH V. KLAUDER: I think the condition is extraordinary. The lesions clinically certainly do not suggest leukemia. They look like ordinary venereal warts to me. I suggest that it may be worth while to examine the eyegrounds. If this boy has intracranial lesions he may have a choked disk on one side or optic neuritis without being cognizant of it.

DR. DONALD M. PILLSBURY: I think it might be worth while to give him some high voltage roentgen therapy in an effort to restore his hearing to some extent before atrophy takes place. In 1 case there was a response, I think to something like 20 r of filtered roentgen rays; of course, this was only temporary.

DR. SIGMUND S. GREENBAUM: The lesion may be superimposed on a leukemic state. The boy has a large number of what I consider infectious lesions derived from the lesions in the groins. They are crusted, and when I removed one of them I found a small ulcer. So far as I know, only two types of ulcerative lesions produce autoinoculative states with ulcers: chancroid and pyoderma gangraenosum. I think they have to be excluded in this case. The skin is exceedingly dry, and that may be the basis for the involvement.

Mycosis Fungoides; Syphilis. Presented by DR. MAURICE BROWN and DR. B. L. KAHN.

F. C., a Negress aged 38, on Feb. 14, 1938, noticed rupturing bullae on her forearm. They were painful until they broke. They appeared gradually on the arms, chest, legs and left buttock. The abdomen, face, neck, scalp, back and right buttock were free. She began to feel weak and nauseated. At present over the chest, forearms, legs and left hip there are lesions in various states of development. They include scaly and crusted nodules with slight erythematous bases and superficial moist sanguineous ulcers with irregular margins which have broken down from previous nodules. There are many pigmented macular scars on the chest. In 1934 she had lesions similar to those now present, and the disease was diagnosed histologically as mycosis fungoides. The urine showed a persistent trace of albumin. The blood count showed 3,210,000 red blood cells and 10,900 white blood cells. The Kahn reaction was strongly positive. The urea nitrogen content of the blood was 28 mg. and the sugar content 87 mg. per hundred cubic centimeters. The bromide and the iodide content were normal. She has received neoarsphenamine, iodides, cod liver oil and boric acid dressings. A total of 725 r of roentgen radiation has been applied to the lesion in divided doses, with slight improvement.

DISCUSSION

DR. SIGMUND S. GREENBAUM: I have seen this patient before and am still convinced that the condition is not mycosis fungoides. A photograph in Darier's book shows gangrene in adults due to mixed infection and superimposed on lowered resistance.

SAN FRANCISCO DERMATOLOGICAL SOCIETY

N. N. EPSTEIN, M.D., *President*

April 22, 1938

H. V. ALLINGTON, M.D., *Secretary*

A Case for Diagnosis (Naevus Unilateralis? Verruca Plana Juvenilis?).
Presented by DR. C. J. LUNSFORD, Oakland, Calif.

A. L. M., a white boy aged 18 years, is a student at the University of California. He was first seen on Jan. 27, 1938, because of an eruption on his right shoulder, the right side of the neck and the right side of the nose, of about three months' duration. There had been no previous injury or pain. The lesion had never been acute; the only subjective symptom was occasional mild itching. There was mild seborrhea of the scalp. The patient states that he first noticed the eruption on the right shoulder and that it gradually spread to the aforementioned areas.

He presents a papular dry scaly eruption beginning about 2 inches (5 cm.) from the upper dorsal vertebra. The lesions course over the shoulder and the right side of the neck to the area beneath the right mandible. There are similar lesions on the right side of the nose. In some areas there is a suggestion of grouping. The papules vary from 1 to 3 mm. in diameter.

The main feature observed on microscopic examination was acanthosis. Urinalysis and a blood count showed no abnormality, and the Wassermann test was negative.

The patient was treated on three occasions by application of liquid air to selected sites. No noticeable improvement followed. He was seen last on April 21, 1938, when the lesions, particularly over the shoulder, had been subjected to severe sunburn. There appeared to be definite improvement at the site of the sunburn.

DISCUSSION

DR. A. E. INGELS: I feel that some of the lesions have the characteristics of lichen planus, with glistening and a distinct violaceous color. I wonder whether the histologic picture would coincide with that diagnosis.

DR. C. J. LUNSFORD, Oakland, Calif.: I have the biopsy section here, and I think that Dr. Ingels will agree that it does not coincide with the picture of lichen planus.

DR. L. R. TAUSSIG: I had a patient with a similar eruption of the neck that simulated lichen planus, and biopsy failed to verify that diagnosis. The histologic picture was not typical of tuberculid either, but I felt that clinically the only possible tentative diagnosis was tuberculid. I think this patient has lichenoid tuberculid.

DR. HARRY E. ALDERSON: Some of the lesions on the neck look not unlike adenoma sebaceum.

DR. H. V. ALLINGTON, Oakland, Calif.: I think the most likely diagnosis is unilateral verrucous nevus.

DR. F. G. NOVY JR., Oakland, Calif.: I have seen some sebaceous nevi in students, and they looked like this.

Hereditary Hemorrhagic Telangiectasia. Presented by DR. A. E. INGELS.

J. M., an Austrian-Jewish furniture finisher aged 70, entered the dermatologic clinic of the Stanford University School of Medicine on March 3, 1938. Five years ago he began to note "red skin" on his forearms and the lower parts of his legs, without subjective symptoms. There were no hemorrhages. His general health has been good. He underwent appendectomy "many years ago." He has taken moderate amounts of alcohol. He had a chancre twenty years ago and has had no treatment. He states that during work he often bumped the buttocks against furniture, from which the present "lumps" in the buttocks developed eight months ago. One sister has similarly distributed extensive telangiectases.

At present densely studded deep red telangiectases with a tinge of cyanosis are found on the backs of the hands and the forearms, around the buttocks, legs and parts of the thighs, and on the tip of the nose and the cheeks. The nasal cavity and conjunctivas are free from telangiectases. The glans and scrotum show slight involvement only. The retinal vessels are sclerotic.

On the right buttock are subcutaneous tumors—i. e., gummas—4 by 5 and 2 by 3 cm. They are fixed in the tissue with the overlying epidermis adherent.

Microscopic examination showed a picture consistent with that of multiple hereditary telangiectases.

The Wassermann reaction was 3 plus on March 4, 1938.

The clotting and the bleeding time were normal.

Sodium bismuthate has been given since March 11, 1938. The tumors on the buttocks have undergone 75 per cent involution.

DISCUSSION

DR. HARRY E. ALDERSON: I think this case is a good example of Osler's disease. I was disappointed that there was no history of nosebleed.

DR. H. J. TEMPLETON, Oakland, Calif.: I presented 2 cases of Osler's disease at the last meeting (ARCH. DERMAT. & SYPH. **38**:498 [Sept.] 1938) and I have observed 1 or 2 more. The lesions in all the cases that I have observed have been punctate, somewhat like a spider nevus. Osler described telangiectasia of the skin and mucous membrane as characteristic, but as far as I know, this man has had no telangiectasia of the mucous membrane. I believe that cases of telangiectasia similar to this have been reported, but I do not believe that the condition in those cases was typical of that described by Osler.

DR. A. E. INGELS: I wish to emphasize that the picture this patient shows is approximately the same as Osler's disease, although the classic type shows telangiectasia and bleeding of the mucous membranes.

A Case for Diagnosis (Erythema Induratum?). Presented by DR. F. G. NOVY JR.

E. R., a white woman aged 34, was first seen on Nov. 7, 1936, because of a palm-sized deep ulcer involving the right calf.

In April 1935, at the time of the birth of her second child, she noticed a lump under the skin at the site of the involvement. This gradually became larger. It was incised but no purulent material was found. The areas then broke down, and the ulcer slowly enlarged. In March 1936 there apparently was an acute secondary infection, with involvement of the lymph nodes in the groin. The condition in the groin apparently cleared rapidly. In August 1936 the ulcer was nearly well but broke down again and was deep and indolent when seen in November 1936.

From then until June 1937 many types of local treatment were used, with no effect. In addition, she had roentgen and ultraviolet irradiation and a course of neoarsphenamine and a bismuth preparation. At times there was evidence of healing, but later the area would break down. In June 1937 the entire mass was

removed by electrosurgery. The area then healed rapidly, and a firm scar formed. She has had no further trouble in this area.

Yesterday the patient returned, stating that for the last three weeks she had noticed a painless red nodule about 6 inches (15 cm.) below the site of her previous lesion. This is hard and deep seated.

The Wassermann test was negative. The tuberculin test gave a weakly positive result. Biopsies were performed on several occasions. The section presented tonight shows a tuberculoid structure.

DISCUSSION

(Drs. Kulchar and Templeton agreed with the diagnosis of erythema induratum.)

DR. N. N. EPSTEIN: I think that rest is probably the most important form of treatment in a case of this kind.

DR. MERLIN TREVOR-ROPER MAYNARD, San Jose, Calif.: Some years ago I used tuberculin in a case of typical erythema induratum. The result was disastrous, because the lesions on the leg took possession of the skin in the form of lupus vulgaris. The patient died some years later of pulmonary tuberculosis.

DR. L. R. TAUSSIG: It seems to me that the pathologic sections in this case are of typically tuberculous structure. I cannot see why a purely circulatory condition should produce tubercles of this type. The disturbance in circulation might be a factor, but I think the disease is basically tuberculous.

DR. F. G. NOVY JR.: This case is interesting when considered in the light of the recent article by E. D. Telford (ARCH. DERMAT. & SYPH. **36**:952 [Nov.] 1937), who suggested that erythema induration is primarily a vascular rather than a tuberculous process. This woman has undoubtedly suffered some damage to her blood vessels by pregnancy. I think that her condition is more likely to be on a vascular than on a tuberculous basis. I should like to know what to do for her.

A Case for Diagnosis (Hyperkeratotic Papular Eruption of Forehead and Cheeks). Presented by DR. ERVIN EPSTEIN, Oakland, Calif.

L. B., a white boy aged 16, has suffered from hemorrhagic nephritis, a complication of an attack of scarlet fever, since February 1934. Nine months ago a small lesion appeared on the center of the forehead. Since then an eruption has spread over the forehead and cheeks and to the elbows and knees. It is entirely asymptomatic. The individual lesions consist of translucent firm hyperkeratotic papules, which have coalesced to form circles and segments of circles. The centers of these patches tend to remain clear. The mucous membranes of the mouth are not involved. There are no comedos. The backs of the hands show no hyperkeratotic follicular plugging. The patient is pale, and although 16, he appears to be only about 12 years old. He is 4 feet 11 inches (150 cm.) tall and weighs but 85 pounds (38.6 Kg.). His blood pressure is 160 systolic and 110 diastolic. He has been on a diet high in milk and eggs for several years because of nephritis.

Subcutaneous congo red tests on both the elbows and knees gave negative results. Urinalysis showed a 2 plus albumin precipitate as well as one granular cast and approximately 100 red blood cells per low power dry field. A blood count revealed marked anemia (43 per cent hemoglobin and 2,020,000 red blood cells) and 7,400 white blood cells per cubic millimeter of blood, with 74 per cent polymorphonuclear leukocytes, 19 per cent lymphocytes, 5 per cent monocytes and 2 per cent eosinophils. A stained blood smear showed slight poikilocytosis and anisocytosis.

Microscopic sections are presented.

DISCUSSION

DR. HARRY E. ALDERSON: Clinically the diagnosis of Darier's disease is suggested. This is not supported by the histologic picture. Could the condition be atypical xeroderma pigmentosum?

DR. MERLIN TREVOR-ROPER MAYNARD, San Jose, Calif.: I suggest the possibility of a vitamin A deficiency. It might be interesting to give the patient large doses of vitamin A.

DR. L. R. TAUSSIG: Why not make a biometric study with regard to vitamins?

DR. N. N. EPSTEIN: There was an unusual amount of inflammatory reaction under the epidermis for any simple inflammatory lesion. This and the configuration of the lesions prompted me to consider an unusual tuberculid.

DR. ERVIN EPSTEIN, Oakland, Calif.: This boy has been on a high vitamin diet for years. He has been treated at the University of California clinic for nephritis, and therapy consisted partly of a high vitamin diet. The lesions on the face were shaped more or less like circles or segments of circles. This, plus the location on the elbows and knees with no involvement of the scalp or other locations usually affected by Darier's disease, made that diagnosis seem unlikely.

Leprosy. Presented by DR. A. E. INGELS.

L. Q., a Chinese butcher aged 20, entered the dermatologic clinic of the Stanford University Hospitals on March 30, 1938, complaining of right foot drop of one or two years' duration.

There had been no known contact with leprosy.

The patient was born in China and lived there until 1927. From 1927 to 1935 he lived in various parts of California. In 1935 he returned to China and stayed until 1937. Since September 1937 he has lived in San Francisco.

In 1934 he first noticed transient pains and weakness in his right ankle, which he attributed to a recurrence of a sprained ankle incurred three years before. These symptoms cleared up for a time, and then in 1936, while he was in China, definite right foot drop and gradually increasing anesthesia over the dorsum of the right foot and ankle and the lower part of the leg anteriorly occurred. The skin over this area was dry and shining, but he first noticed redness and discoloration there in February 1938. At this time he also had such severe pains on the right side ("rheumatism") and malaise that he had to quit work.

Examination reveals that the patient cannot flex his right foot toward the dorsum. There is definite anesthesia of the dorsum of the right foot and of the lower half of the right leg anteriorly. A thickened nerve can be palpated on the inner side of the right leg. A thickened right ulnar nerve can also be palpated.

A reddened dry shining area of skin on the right foot extends around the leg and above the knee, with darker, irregular, sharply demarcated borders. There are two small similar areas on the left foot and one on the right arm.

The Wassermann and the Kahn test were negative.

Scrapings from the nose showed no acid-fast bacilli.

Microscopic sections of the skin and of the right peroneal nerve were presented. The picture was consistent with leprosy, but no bacilli have as yet been conclusively demonstrated.

A blood count showed 14,700 white blood cells and normal amounts of hemoglobin and red blood cells. The differential count was normal.

DISCUSSION

DR. N. N. EPSTEIN: The boy came to this country ten years ago. Apparently the period of incubation was at least ten years.

DR. A. E. INGELS: Acid-fast bacilli were not demonstrated, but sections from the peroneal nerve showed forms appearing to be acid-fast bacilli in the dark field; however, they were so evenly distributed that it was hard to believe that they could be acid-fast bacilli.

Fixed Eruption (Phenolphthalein). Presented by DR. FRANCES TORREY.

J. P. LaD., a white man aged 27, was first seen in the dermatologic clinic of the University of California Medical School on March 25, 1938.

He complained of a generalized eruption of four or five days' duration. The present attack is the fifth during eighteen months. The first attack was confined to the cubital fossae. At its onset the patient was working in a tomato cannery and drank large quantities of tomato juice. The last two attacks followed the taking of "ex-lax." In all attacks the eruption recurs in the same areas.

The patient presents a generalized maculopapular eruption of the type of erythema multiforme. The color of the macules is a striking reddish purple. There is one lesion on the hard palate.

DISCUSSION

DR. C. J. LUNSFORD, Oakland, Calif.: I agree with the diagnosis.

Dr. N. N. EPSTEIN: When the patient first came into the clinic, the eruption looked like erythema multiforme except for the large size of the lesions.

DR. G. V. KULCHAR: I should classify his eruption as erythema multiforme due to ingestion of phenolphthalein.

Treatment-Resistant Primary Syphilis. Presented by DR. G. V. KULCHAR.

H. H., a white man aged 32, a painter, had a genital chancre. Dark field examination showed Spirochaeta pallida, and the Wassermann reaction was positive. In April 1937 a course of twenty injections of 0.45 Gm. of neoarsphenamine and twenty injections of 0.12 Gm. of iodomismitol at weekly intervals was started. Generalized psoriasiform secondary lesions developed after three weeks' treatment. Mapharsen was substituted for neoarsphenamine, but the lesions persisted. The Wassermann reaction was negative in August 1937. His lesions became hypertrophic and frambesiform in January 1938. Results of dark field examination were again positive. He received ten days of fever therapy induced by intravenous administration of typhoid antigen H, during which treatment the lesions partially disappeared. Results of dark field examination became negative. After fever therapy the lesions recurred and the results of dark field examination again became positive. The Wassermann reaction was strongly positive on the same day. Two injections of silver arsphenamine were given, without any change in the lesions or the results of dark field examination. One injection of 0.4 Gm. of arsphenamine was given on April 19, 1938; forty-eight hours later dark field examination still gave positive results.

The patient has always previously been well. He acquired gonorrhea in 1936 and again in February 1938.

At present physical examination shows no abnormality except the condition of the skin. Over the upper lip and on the upper and lower extremities are frambesiform lesions, some of which are purulent, ulcerative and surmounted by keratotic crusts. They vary from 2 to 5 cm. in diameter. The mucous membranes and the anogenital areas are normal.

The Wassermann reaction was strongly positive and the results of dark field examination positive on April 21, 1938. Examination of the cerebrospinal fluid showed: 5 cells per cubic millimeter; 0.7 Gm. total protein per liter; a positive reaction to the Pandy test; a negative reaction to the Wassermann test and a Lange colloidal gold curve of 1111110000.

DISCUSSION

DR. F. G. NOVY JR., Oakland, Calif.: I suggest daily injections of old arsphenamine for three days, followed by a rest of ten days after which the treatment may be repeated; heavy metals may also be given; malaria therapy could be tried later if necessary.

DR. H. J. TEMPLETON, Oakland, Calif.: I had a patient whose lesions were resistant to both arsphenamine and bismuth preparations but finally cleared during administration of colloidal mercury sulfide and iodides.

DR. ERVIN EPSTEIN, Oakland, Calif.: I saw a similar condition that cleared when occlusive dressings were used. The patient had managed to keep the lesions active by repeated trauma.

DR. H. V. ALLINGTON, Oakland, Calif.: I have been following a patient with a similar condition; he was given intravenous typhoid-paratyphoid vaccine, and there was improvement but not complete healing. After a course of eight attacks of fever provoked by blankets and body baking, in which the temperature was maintained at 105 F. for five hours, dark field examination showed negative results; the lesions healed, and the Wassermann and the Kline test became negative and have remained so for a year, during which treatment with neoarsphenamine and a bismuth preparation has been given.

DR. MERLIN TREVOR-ROPER MAYNARD, San Jose, Calif.: I suggest giving 10 grains (0.65 Gm.) of sodium iodide daily. I tried this on a young woman with congenital syphilis whose lesions had progressed steadily during treatment with neoarsphenamine and a bismuth preparation. Her liver was enlarged, and she had ascites. The condition cleared during administration of sodium iodide; there were no symptoms of intolerance.

DR. A. E. INGELS: I cannot but feel that this man's condition is different from the resistant type with atrophy. These lesions are angular, not round, which is unusual in treatment-fast recurrences. No atrophy is present. I am reminded of a patient of Dr. Alderson's, whose condition was absolutely refractory to treatment; however, the lesions would involute in one place and appear in another place, leaving obvious atrophy. Much the same treatment was given in that case. It is conceivable that a patient with lymphoblastoma could show spirochetes and a positive Wassermann reaction, as this patient does. I am not entirely satisfied with the diagnosis.

DR. N. N. EPSTEIN: I should like to make a few remarks about the effects of fever on the mechanism of resistance in syphilis. I do not think that it has been proved that fever increases greatly the resistance of the patient to Spirochaeta pallida. As the members may recall, experiments with high temperature in the treatment of early syphilis did not give satisfactory results. Relapse is common after the use of artificial fever alone. The same thing is true after use of malaria. I have not had much experience with typhoid vaccine as a fever-producing instrument. The tendency to prompt relapse indicates that the resistance of the patient had not been greatly enhanced.

DR. G. V. KULCHAR: The patient has had repeated dark field examinations, and spirochetes have been seen. I cannot understand how lymphoblastoma could fit into this picture.

This patient has resistance to treatment of the primary type—i. e., the lesion does not involute. I have seen resistance of the secondary type.

I think that such a condition is due to the present system of treatment with combined therapy, prolonged courses of twenty injections each of neoarsphenamine and a bismuth preparation. I now have 11 cases of resistance to treatment, and I think the number is sufficient to show the inadequacy of the method.

A Case for Diagnosis (Erythroderma with Stiffness and Induration of Deeper Tissues). Presented by DR. H. J. TEMPLETON, Oakland, Calif.

J. A., a Dane aged 54, first consulted me two months ago, because of stiffness and induration of the palms of four months' duration. In addition, he presented a superficial scaling erythroderma of the face, arms and trunk of more recent origin. He also has had generalized stiffness of the joints and rheumatoid pains.

Examination disclosed the erythroderma and a peculiar subcutaneous induration of the palms, fingers and wrists. When one shook hands with him the induration was noticeable. The fingers and the hands could not be completely extended. Aside from the rheumatoid pains, the patient's only complaints were of tiring easily and being short of breath.

A complete physical examination by Dr. Harold W. Lambert, of Berkeley, Calif., revealed nothing of interest.

A complete blood count showed moderate leukocytosis (10,875 white blood cells) and 8 per cent eosinophils. Because of the eosinophilia an intradermal test for trichiniasis was done but results were negative. The Wassermann reaction was negative. Urinalysis showed no abnormality.

One grain (0.06 Gm.) of thyroid was given daily; a high vitamin diet was ordered and the patient put at rest. Under this treatment most of the erythroderma has disappeared, and the hands and wrists have become softer.

DISCUSSION

DR. L. R. TAUSSIG: Tentatively, I should make a diagnosis of dermatomyositis.

DR. A. E. INGELS: This man has erythema and increased cutaneous temperature as outstanding symptoms, and he tells me that after walking his pains increase considerably. One possibility might be erythromelalgia. I think that the diagnosis Dr. Taussig suggested has to be thought of, as contractures have already appeared.

DR. G. V. KULCHAR: I agree that the most likely diagnosis is dermatomyositis. One might do a muscle biopsy. If the condition does turn out to be dermatomyositis, fever therapy or treatment with amino acids could be used.

DR. N. N. EPSTEIN: Scleredema adultorum was considered in the differential diagnosis. I do not believe that the condition falls into that group. In scleredema this inflammatory reaction of the epidermis does not occur.

A Case for Diagnosis (Infiltrated Scaling Plaques of Legs, Thighs, Elbows and Knees, Followed by Atrophy). Presented by DR. FRANCES TORREY.

H. C., a white woman aged 25, was first seen in the University of California dermatologic clinic in February 1938, because of cutaneous lesions involving both legs, from ankles to buttocks, the elbows, the upper part of the back and the scalp, of fifteen years' duration.

Symmetric areas on both legs showed purplish red coalescing plaques covered with scales, with interlacing areas of telangiectasia and atrophy. The active lesions showed crusting and scaling, with some central ulceration. There was a growth of coarse hair over the area of eruption on both legs. Atrophic, coalescing plaques covered both elbows and were scattered over the back. A few were seen in the scalp. The patient complained of mild pruritus.

Physical and laboratory examinations gave essentially negative results.

Microscopic examination of an active lesion removed from the left thigh showed some characteristics of poikiloderma atrophicans vasculare of Jacobi. Hypertrophic lichen planus has been considered in differential diagnosis but is not supported by the histologic picture.

Three injections of 1 cc. of bismuth subsalicylate intramuscularly at weekly intervals have been given. There has been considerable reaction at the site of each injection.

DISCUSSION

DR. L. R. TAUSSIG: Microscopically, sections from this patient showed the same histologic picture as did the sections in the case of poikiloderma I reported some time ago (ARCH. DERMAT. & SYPH. **25**:882 [May] 1932). I am not suggesting this diagnosis, but the pathologic picture is similar—that is, the embryonal hyperplasia of the blood vessels developed as a sheath between the epidermis and the dermis. I presume that this characteristic goes along with atrophic changes, but I have not seen it in any other sections.

DR. H. V. ALLINGTON, Oakland, Calif.: It is interesting to me that the lesions occur in areas of skin subject to low grade injury—i. e., the legs, the

posterior surfaces of the thighs and the buttocks, elbows and knees. The patient states that scratching or rubbing will produce a blister. Numerous tiny milia-like bodies are present in some of the involuting lesions.

DR. MERLIN TREVOR-ROPER MAYNARD: I think it cannot be denied that a great deal of the picture is factitious. Numerous excoriations are present. Disregarding the factitious element, I should call the condition poikiloderma.

DR. FRANCES TORREY: I have nothing to add except in regard to the question of a factitious element. The girl is particularly anxious to be married and wants to have her skin clear. She has spent a large amount of money for treatment. She was treated for psoriasis in the southern part of the state for a long time.

A Case for Diagnosis (Yellowish Red Scaling Areas of the Ankle). Presented by DR. H. V. ALLINGTON.

T. W., a woman aged 26, presents lesions involving the left ankle, which began in January 1937. They are dull reddish yellow and confluent over the medial surface and scattered in small guttate areas on the anterior and the lateral surface. At the periphery of the areas isolated flat-topped lichenoid papules can be distinguished. The surface is exfoliating in large thick "sheets." The lesions are superficially infiltrated and warmer than the surrounding tissue. They itch moderately.

The patient had the usual diseases of childhood, plus a severe attack of "flu." Five years ago she was operated on for some pelvic disorder. She has also undergone tonsillectomy and hemorrhoidectomy. Three weeks ago she was hospitalized for three days because of an acute gastrointestinal upset. No definite diagnosis was established, and the patient has been well since.

The Kline test was negative. Urinalysis showed no abnormality. A blood count revealed 4,350,000 erythrocytes, 75 per cent hemoglobin and 9,150 leukocytes, with a differential count of 65 per cent neutrophils, 5 per cent eosinophils, 29 per cent small lymphocytes and 1 per cent large lymphocytes.

A microscopic examination showed moderate acanthosis and dyskeratosis, characterized by cells with homogenous pale cytoplasm devoid of granules, occurring in localized groups in the normal position of the keratohyalin layer. Aside from an acidophilic tint to the whole section, the picture was otherwise in keeping with a superficial nonspecific inflammatory process. Stains for amyloid gave negative results.

DISCUSSION

DR. L. R. TAUSSIG: It seemed to me that this patient presented a typical picture of necrobiosis lipoidica diabeticorum. I believe that necrobiosis is generally accepted as an obligatory diabetid and that if diabetes is not present that diagnosis cannot be made.

DR. G. V. KULCHAR: I think the condition more likely to be one of the extracellular lipoidoses. I think it certainly fits somewhere in the group.

DR. H. V. ALLINGTON, Oakland, Calif.: I feel that a lipoid disturbance is possibly present.

NOTE.—Subsequently a sugar tolerance test and a determination of basal metabolic rate gave normal results. Sections stained for fat examined microscopically showed no abnormal amount or distribution of fat. Careful general physical examination showed nothing significant. The lesion improved 75 per cent after administration of roentgen rays (300 r divided into four weekly doses) and protective dressings of a zinc oxide–starch paste.

A Case for Diagnosis (Multiple Idiopathic Hemorrhagic Sarcoma?). Presented by DR. C. J. LUNSFORD, Oakland, Calif.

A. L. J., a white woman aged 75, was first seen on March 30, 1938, because of lesions on the lower part of the right leg. These are said to have begun at

the site of mosquito bites in October 1937, as "lumps" which have increased in size since.

When first seen, the patient presented multiple violaceous firm dry papules, varying from 3 to 8 mm. in diameter. Most of them were discrete, but near the inner malleolus some had become confluent. They were covered by dry branny scales. The color did not fade on pressure. There were no subjective symptoms. No lesions were present elsewhere on her body and none in her mouth. The patient stated that she felt perfectly well. She gave no history of vascular disturbance; there were no varicose veins. Dr. Douglas D. Stafford, of Alameda, Calif., who referred her, advised me that a general physical examination two months before showed her to be in good general condition. Laboratory tests had given negative results. Microscopic examination ruled out lichen planus. (Sections were presented.)

Urinalysis has showed sugar on certain occasions. The sugar content of the blood during fasting was normal, however. She is being treated as a "prediabetic" patient.

The patient has received three roentgen treatments of 75 r.

DISCUSSION

DR. A. E. INGELS: I feel that the sections showed Kaposi's sarcoma rather than hemangioma.

DR. L. R. TAUSSIG: I thing the condition clinically is Kaposi's sarcoma, and the sections were certainly compatible with that diagnosis.

Tuberculid. Presented by DR. FRANCES TORREY.

I. G., a white woman aged 25, was first seen in the University of California dermatologic clinic in October 1934.

At that time an acneform eruption was present over the entire body. The lesions were more numerous on the face, back and hands. There was one lesion on the mucosal surface of the labia majora. The mucous membranes of the mouth were free. The patient weighed 125 pounds (56.7 Kg.).

No history of internal medication could be obtained, and the urine showed no iodine or bromine.

Cultures of material from the lesion on the vulva showed large gram-positive rods, aerobes, Bacillus welchii, Bacillus coli, Staphylococcus albus and Streptococcus alpha. A culture of material from a lesion on the skin showed Staph. albus.

Inoculation of a guinea pig gave negative results.

The patient was not seen again until April 1936. At this time there was a severe exacerbation of the pustular lesions over the entire body, more marked on the lower parts of the legs, where there were ulcerations from 1 to 3 cm. in diameter with considerable surrounding inflammation. Wolfe tuberculin ointment applied to an ulcer on the right leg produced a severe reaction; applied to a normal area on the chest it produced an erythematous plaque.

The lesions remained about the same until June 1936, when two injections of neoarsphenamine were given. A generalized papular eruption more marked on the trunk appeared after the second injection.

By July 1936 there was considerable improvement in all the lesions, although numerous ulcers were still present on the legs.

The patient next returned in May 1937. She had gained 60 pounds (27.2 Kg.) in seven months. Her basal metabolic rate was —19 per cent. She was given thyroid extract (Armour), 1 grain (0.06 Gm.) daily. There was an exacerbation of the eruption at this time, the pustules being more numerous over the back and buttocks.

A violent local reaction was produced with 0.1 cc. of tuberculin.

Roentgenograms of the chest showed evidence of former minimal, and what appeared to be healed, tuberculosis of the upper lobe of the right lung at the apex and of the lower portion of that lobe, just above the interlobar fissure, with consequent thickening of the medial portion of the interlobar fissure between the upper and the middle lobe. There was minimal calcification along the bronchi

passing to the lower lobe of the right lung. No lesions appeared active at the time of examination.

In March 1938 the patient returned, with a recurrence of the eruption, which she said had been present for three weeks. Her weight was 166 pounds (75.3 Kg.). Physical examination in the clinic for diseases of the chest gave essentially negative results. The basal metabolic rate was —10 per cent. Urinalysis showed no iodine or bromine.

Microscopic examinations of sections from a recent lesion on the leg showed a subacute inflammatory reaction; there was no tubercle formation.

Smear and cultures of material from a pustule showed staphylococci.

DISCUSSION

DR. F. G. NOVY JR., Oakland, Calif.: I have felt strongly that the condition is a drug eruption. However, no history supporting this can be obtained.

DR. L. R. TAUSSIG: The seasonal recurrence is interesting. The sections fail to show anything suggestive of tuberculous structure, which does not, however, rule out the possibility of tuberculid. I agree with Dr. Torrey that the condition is probably tuberculid.

DR. G. V. KULCHAR: The condition might fall into the group of severe necrotic acne. It might be well to try administration of staphylococcus toxoid.

DR. FRANCES TORREY: I doubt the importance of seasonal influence. The patient has been better and worse, but the condition has never completely cleared.

A Case for Diagnosis (Pemphigus? Erythema Multiforme?). Presented by DR. L. R. TAUSSIG.

R. C. J., a housewife aged 33, was first seen in the dermatologic clinic of the University of California Hospital on April 15, 1938, because of "canker sores." The first attack occurred three years ago in March and lasted three months. The second attack occurred in October of the same year. There have been repeated exacerbations (about six in all), each exacerbation occurring in the spring or fall. There has never been complete freedom from the oral lesions. In January 1937, one year ago, there was a "generalized eruption of small blisters," most marked on the extremities. After two weeks the eruption disappeared, except for discrete stains on the extremities, which are still present. The mouth healed and remained almost clear until the present attack occurred, in October 1937.

Examination shows scattered white necrotic areas over the tongue and buccal mucosa. These lesions are superficial and painful, and the necrotic area may be removed with difficulty, leaving a bleeding base. There are scattered pink papules over the arms, marked on the extensor surfaces. These papules have been present for two days.

Physical examination revealed no evidence of systemic disease. The basal metabolic rate and the blood count were normal.

Phenolphthalein, ¾ grain (0.048 Gm.), in 4 cc. of an emulsion of liquid petrolatum and agar were given on April 18. This produced no reaction in the skin or the mucous membrane.

DISCUSSION

DR. L. R. TAUSSIG: I think that in this case months or years must pass before a diagnosis can be made. At present a diagnosis of pemphigus requires some reservations. The lesions on the forearm are small bullae. The patient states that they itched before they appeared, and when the bullae appeared the itching ceased. Of course, that is not an ordinary symptom in pemphigus.

DR. N. N. EPSTEIN: I rather favor a more serious diagnosis than erythema multiforme and suggest a benign form of pemphigus.

Lupus Erythematosus. Presented by DR. MERLIN TREVOR-ROPER MAYNARD, San Jose, Calif.

CLEVELAND DERMATOLOGICAL SOCIETY

CLAUDE BAZIL NORRIS, M.D., *President*

April 28, 1938

C. L. CUMMER, M.D., *Secretary*

J. R. DRIVER, M.D., *Reporter*

Ulcers of the Leg, Associated with Sickle Cell Anemia, in Sisters. Presented by DR. W. F. SCHWARTZ (from the Department of Dermatology and Syphilology, City Hospital).

CASE 1.—L. C., a girl aged 13, presents an indolent ulcer 1.5 by 2 cm., which developed on the anterior surface of the left leg ten months ago, after minor trauma. The ulcer attained its present size within a few weeks. There have been no other lesions.

The spleen and liver are not palpable.

This patient showed 20 per cent sickling of red cells after twenty-four hours on April 11, 1938, but at the present time there is less than 5 per cent sickling. There were 4,650,000 erythrocytes, 80 per cent hemoglobin and 0.9 and 1.1 per cent reticulocytes, respectively. The Kline reaction was negative.

The urine showed no bromine. The tuberculin tests gave negative results with dilutions down to 1:100,000. A roentgenogram of the chest was normal.

She has been treated with concentrated liver extract, 1 cc. daily since April 11, 1938. Some improvement has resulted. She has been hospitalized since April 7, 1938.

CASE 2.—L. A. C., a girl aged 15, had a few ulcers on the lower part of each leg after mosquito bites about eight months ago. These ulcers healed after a few months, leaving scars. Later two or three new ulcers appeared; these have persisted for the last six months. There has been no ingestion of drugs.

The spleen and liver are not palpable.

The patient showed 15 per cent sickling of erythrocytes after twenty-four hours on April 11, 1938, but at present there is less than 3 per cent sickling. There were 4,950,000 erythrocytes and 90 per cent hemoglobin. The Kline reaction was negative.

The urine showed no bromine. Tuberculin tests gave negative results with dilutions down to 1:100,000. Roentgen examination of the chest showed no sign of tuberculosis.

The patient has received local applications of fresh aloe leaves to one ulcer and nothing to the others since April 11, 1938. She has been hospitalized since April 7, 1938. There has been some improvement.

DISCUSSION

DR. C. L. CUMMER: In some specimens of blood there is immediate sickling, and in others sickling does not appear until later. The specimen should be ringed and kept at least twenty-four hours. I have tried ringing a hanging drop, but did not think that worked well. In some of the specimens the sickling is striking and can be demonstrated at once. If one wants to demonstrate it in a considerable percentage of cases, longer periods of observation are necessary.

DR. H. N. COLE: The disease is probably more common than is suspected. It is familial, as is demonstrated by these cases. Usually the ulcers develop after the age of 15.

DR. J. EDGAR FISHER: The picture in both cases is unusual. There is a history of injury in both. What is the prognosis?

DR. H. N. COLE: The patient keeps right on getting the ulcers. Any trifling trauma may be the exciting cause.

DR. W. F. SCHWARTZ: It is well to keep in mind the fact that the amount of sickling in any case may vary greatly from time to time. Repeated examinations may be necessary to make a diagnosis.

Cutaneous Horn in a Negro. Presented by DR. GARRETT ARTHUR COOPER (from the Department of Dermatology and Syphilology, Lakeside Hospital).

D. B., a Negro aged 56, has had a lesion on his wrist as long as he can remember. It has remained the same size, except that he keeps it "trimmed down." It has never been painful, and the color has not changed.

The skin is essentially normal, with the exception of that on the left wrist. Here there is a group of lesions, the largest measuring 2 by 2.5 cm. and being raised about 0.5 cm. There are several smaller lesions arranged in a line proximal to the large one. The large lesion has an erythematous base, but no evidence of inflammation. The surface is keratotic, irregular and fissured.

Histologic examination showed extreme superficial keratinization. There were moderate thickening of the basal layer and some extension into the corium. The underlying tissue was made up of dense connective tissue containing a few capillaries, with a diffuse infiltration of round cells.

DISCUSSION

DR. J. EDGAR FISHER: The picture is fairly typical. The condition is not seen often, and it is interesting. What will the treatment be?

DR. BURTON FREDERICK BARNEY, Columbus, Ohio: I have used solid carbon dioxide on small lesions of this type, and it has proved efficacious in a number of cases.

DR. L. T. CARSON: I have treated a condition like this one in 2 cases. I removed the keratotic tissue with the electric needle and treated the base with solid carbon dioxide.

DR. J. R. DRIVER: This lesion really has a keloid base, and the histologic structure is that of keloid with a keratotic top. Keloid sometimes responds to solid carbon dioxide.

DR. GARRETT ARTHUR COOPER: One of the purposes in presenting the case today was to see if any one had suggestions other than total excision of the lesion. The surgeons think they can get a good closure.

Acnitis. Presented by DR. E. W. NETHERTON and DR. GEORGE HASKEL CURTIS (by invitation).

A. D. G., a man aged 46, has had close association for one month on each of two occasions during the past year with a brother-in-law who has lupus vulgaris.

In December 1937 a symptomless eruption developed on his face. There were alternating periods of improvement and exacerbation, and during the exacerbations pus could be expressed from some of the lesions. There is no history of tuberculosis, of gastrointestinal disturbance or of ingestion of bromide. He uses iodized table salt. Many of the lesions have healed, leaving pitted scars.

At the first examination the face, especially the cheeks and nose, showed a grouped papular and papulopustular eruption and pinhead-sized pitted red scars. The papules varied in size from that of a pinhead to that of a split pea and were dull red and infiltrated, with depressed hyperkeratotic crusting of the apex. Other lesions were definitely pustular, with red telangiectatic bases. There are at present many pinhead-sized red pitted scars and scattered infiltrated papules. The eruption has been improving under treatment. Diascopic pressure showed granulomatous infiltration in some lesions.

General physical examination showed mild hypertension. A roentgenogram of the chest showed no abnormality.

A blood count and urinalysis showed no abnormality, and the sugar content of the blood was normal. The Wassermann and the Kline reaction were negative. Intradermal tests with old tuberculin, with dilutions of 1:10,000; 1:100,000 and 1:1,000,000 gave positive results.

Histologic examination of papules on the right cheek showed the surface of the epidermis to be uniformly covered with a thin layer of hyperkeratosis; the follicles contained keratotic plugs. Parakeratosis was present in the larger plugs, and there was acanthosis. The basal layer was distinct and intact. A diffuse inflammatory infiltration consisting of epithelioid cells and lymphocytes involved the papillary layer and most of the corium. Numerous giant cells of the Langerhans type were scattered throughout the infiltration. There were no well defined tubercles. In a rather large microscopic abscess just beneath the epidermis, leukocytes had invaded the cellular débris. The infiltration was most intense around the pilosebaceous follicles.

From February 1 to April 4 the patient was treated with white lotion and capsules of ichthammol. The pustular lesions disappeared. Since April 4 he has had four doses of 75 r each of unfiltered roentgen rays at weekly intervals; there has been moderate improvement.

DISCUSSION

DR. J. R. DRIVER: I agree with the diagnosis.

DR. J. EDGAR FISHER: The condition is fairly typical.

A Case for Diagnosis (Sarcoid?). Presented by DR. E. W. NETHERTON and DR. GEORGE HASKEL CURTIS (by invitation).

H. O. B., a woman aged 50, in the spring of 1937, after purchase of new spectacles, noticed a spot at the site of the left nose piece. She was treated with ointment of zinc stearate, and the left side of the face became red and swollen. A physician treated it with wet packs and sulfanilamide, and in a week the inflammation subsided, leaving the present lesions. The central one has gradually enlarged. Smaller ones were the size of a pinhead in the beginning. The lesions, according to the patient, became flat at times, but never entirely disappeared. For years she has taken "headache tablets" prescribed by her physician for a menstrual headache. There is a suggestive relationship between the taking of the tablets and the exacerbations, according to the history.

The lesions are limited to the face. One on the left side of the bridge of the nose is slightly elevated, the size of a pea and dark bluish red, with an indefinite border, from which dilated blood vessels run toward the center. The second is just below the left inner canthus and is somewhat rectangular, light brown with a reddish tint and fairly sharp and has lighter borders, which show dilated superficial blood vessels. This lesion is elevated, the border slightly more than the center. The third lesion is on the zygoma and is similar to the lesion on the nose. Diascopic pressure shows brownish granulomatous changes.

The general physical examination showed no abnormality except mild hypertension. Roentgenograms of the chest and kidneys were normal. The gallbladder was found to contain eleven gallstones.

A blood count showed normal hemoglobin, and urinalysis showed nothing abnormal. The Wassermann and the Kline reaction were negative. An intradermal test with old tuberculin with a dilution of 1:10,000 gave a positive result.

A section from the large lesion below the left inner canthus showed all layers of the epidermis normal over the area of the greatest infiltration, where there was moderate spongiosis. Slight edema was present in the subpapillary layer, becoming more marked in focal areas of infiltration and in the deep part of the corium. At a distance from the dense infiltration there were localized areas of perivascular proliferation of round and epithelioid cells and an occasional eosinophil. As the infiltrate became more dense, polymorphonuclear cells predominated, and many eosinophils were present. The infiltrate involved the subpapillary layer,

and the elastic tissue showed degenerative changes. Sebaceous and coil glands and hair follicles were numerous. No giant cells were present.

Treatment has consisted of administration of arsenic (Asiatic) pills and roentgen rays, 225 r once a month for four treatments. There has been no improvement.

DISCUSSION

DR. GEORGE HASKEL CURTIS (by invitation): This woman is presented for diagnosis of the condition and therapeutic suggestions. The history of the condition is much like that of sarcoid. In searching the literature I was unable to find a description of anything like this histologic picture. Histologically there was considerable eosinophilia and a moderate amount of proliferation of epithelioid cells. Is the condition a drug eruption, sarcoid, Hodgkin's disease or mycosis fungoides? All one can say is that it is a chronic inflammation. Histologically it does not seem to be characteristic of any of the conditions suggested. Incidentally, with Hodgkin's disease or lymphogranuloma one would expect the lesions to disappear during roentgen therapy.

DR. J. R. DRIVER: Clinically a diagnosis of sarcoid is justified, I believe.

DR. R. E. BARNEY: Was the biopsy specimen taken before or after roentgen treatment?

DR. GEORGE HASKEL CURTIS (by invitation): It was taken after the second roentgen treatment. There was never a reaction to the roentgen radiation.

DR. R. E. BARNEY: I think the roentgen rays might have changed the histologic picture, since the dose was large. I agree with the clinical diagnosis of sarcoid.

DR. G. W. BINKLEY: I also agree. The color and the condition of the blood vessels tend to suggest sarcoid.

DR. E. W. NETHERTON: That was the diagnosis we made, but do the members think it could be accepted in view of the biopsy?

DR. G. W. BINKLEY: The picture is not exactly classic, but suggestive.

A Case for Diagnosis (Tuberculosis of the Skin? Capillaritis?). Presented by DR. C. G. LAROCCO.

A. M., a salesman aged 36, was first seen because of lumps on the abdomen, in the lumber region and on the right arm. His disease started in June 1937. Two lesions had been incised and discharged creamy thick pus.

On the outer side of the right arm and in the left anterior abdominal area and the left lumbar area are discrete firm tumors, generally circular and from 1 to 1.5 cm. in diameter. The lesion on the abdomen gives a dense keloidal sensation. The lesion on the back is similar, and a droplet of sanguineous pus can be expressed. The skin overlying these lesions is hyperpigmented. On the outer part of the right arm is a firm inflammatory nodule, showing an irregular surface and small areas of crusting. From the lower part of this lesion a biopsy specimen was taken.

General physical examination showed no abnormality, with the exception of a cataract of the right eye.

Histologic examination showed no pathologic changes in the epidermis except a loss of interpapillary projections and a bandlike appearance in one part of the section.

The morbid process was strictly perivascular. It affected all the blood vessels in the superficial as well as the deeper parts of the corium. The endothelial lining of the capillaries was swollen; the nuclei bulged into the lumen, and in some places capillaries were completely obliterated by this endothelial swelling.

Around these blood vessels was a limited area of cellular infiltration, more or less dense, made up mostly of lymphocytes. A few plasma cells as well as a rare polymorphonuclear cell could be seen here and there. In one area in the subpapillary portion of the corium a few giant cells were present. These contained three or four nuclei at the most and were not characteristic of any disease.

The corium itself was thickened and perhaps a little edematous. Here and there a few red cells were found, isolated or in small groups, between the interstices of the connective tissue. As a rule, these small extravasations of blood were independent of the foci of lymphocytic infiltration.

Treatment has consisted of simple antiseptic dressings; there has been no change in the lesions.

DISCUSSION

DR. E. W. NETHERTON: I think these lesions are granulomatous. The one on the back is much infiltrated. Histologically there are isolated areas of giant cells and lymphocytic infiltration. I think the condition is possibly some form of tuberculosis of the skin. I am talking about the lesion on the arm. One, however, would have to rule out various types of fungous infection.

DR. H. G. MISKJIAN: It is true that there are giant cells, but the general histologic picture is entirely different from that of tuberculosis. One never sees changes in the capillary blood vessels in tuberculosis of the skin. One of the sections presented shows a capillary blood vessel almost entirely obliterated. The lymphocytic infiltration is limited and is entirely around groups of capillary blood vessels. Primarily the disease is one of capillary origin. I propose to call it capillaritis.

DR. J. R. DRIVER: Clinically it looks to me like papulonecrotic tuberculid.

DR. H. N. COLE: The patient has definite acne. Would it not be possible to explain these lesions as areas he has picked or squeezed and secondarily infected?

DR. C. G. LAROCCO: It is interesting to see the varying conceptions that the members have of an entity seemingly as well known as papulonecrotic tuberculid. That entity of course entered into the diagnosis. However, I ruled it out on account of the depth of the lesions. The condition does not seem to fit into any one entity without absence of some feature. For that reason I found it difficult to come to a conclusion.

Two Cases for Diagnosis (Erythema Solare?). Presented by DR. W. F. SCHWARTZ (from the Department of Dermatology and Syphilology, City Hospital).

CASE 1.—W. S., a red-haired freckled boy aged 3 years, has a sharply demarcated erythema under the eyes, which developed two weeks ago and spread medially across the nose and laterally on the cheeks, giving a butterfly configuration. Since then a similar erythema has appeared on the tip of the lobe of each ear. The erythema was bright red at first, but now is dark reddish brown.

There is no evidence of erythema or tanning on the parts of the face not affected by the process.

There have been no local applications before or since the onset.

CASE 2.—J. S., a blond boy aged 2 years, has a patch of erythema on each cheek, which developed three weeks ago. The mother states that possibly the sun was a little hotter the day before it appeared, although the child had been outside frequently. The erythema spread medially across the nose and laterally on the cheeks. There have been no subjective symptoms, and the child has been well.

One week ago, when the patient was first seen, there was a butterfly distribution of erythema across the nose and cheeks, with distinct margins below the eyes and lateral to the alae nasi, but with fading margins posteriorly on the cheeks. There was some fine scaling over the malar regions, but lateral to this there were several faint-ringed edematous lesions, measuring up to 1 cm. in diameter. The rest of the face was white, with no evidence of tanning. Since last week the erythema has lost some of its bright red color and has become dark reddish brown.

DISCUSSION

DR. J. EDGAR FISHER: I have seen this condition in young children practically every spring when they have been exposed to the sun, and they present a tem-

porary erythema of the face on the areas where lupus erythematosus usually appears. However, in the latter part of the summer the condition clears. I am concerned as to whether some of these conditions may turn into typical lupus erythematosus.

DR. M. J. GIBANS, Akron, Ohio: I had 2 cases of such a condition. The eruption appeared two seasons in succession during the early part of the summer and never recurred.

DR. EMERSON GILLESPIE, Canton, Ohio: I think it is worth while to use some protective measures for these children. The location of the process of course suggests lupus erythematosus, but I believe the condition is of actinic origin.

DR. C. L. CUMMER: In reviewing the literature on lupus erythematosus in childhood, I found cases of lesions appearing in this manner. While I do not think one can make a definite diagnosis in either of these 2 cases, it seems to me that the patients should be kept under observation. After all, why would not the entire face be affected if the erythema were due only to the sun's rays? In these patients pigment probably develops slowly if at all.

DR. H. N. COLE: I think Dr. Cummer's point is well taken. A number of years ago I saw a patient with a condition of this type. He returned recently to the outpatient department of Lakeside Hospital. He died of disseminate lupus erythematosus. Unfortunately, permission for autopsy was refused.

Tertiary Syphilis with Unusually Extensive Involvement. Presented by DR. GARRETT ARTHUR COOPER (from the Department of Dermatology and Syphilology, Lakeside Hospital).

M. B., a woman aged 66, states that she received a human bite on the lip at the age of 20. Following this a hard lesion developed on the lip and persisted for four months. No treatment was given at this time. Her general health has been impaired since 1928. In 1932 she noted that her walking became more difficult, that her feet were heavy and difficult to manage. In 1933 she noted some edema of the feet. In 1934 a sore developed on the foot; this did not respond to treatment. Then an ulcer developed and gradually increased in size. Soon it became difficult for her to wear shoes. However, she continued to walk until 1935. About the same time an eruption developed on the arms and back. The patient states that there has never been an open lesion. In 1935 the patient was hospitalized at irregular intervals, and in June 1935 the fourth left toe was lost. Antisyphilitic therapy was instituted in December 1937. It was soon discontinued, however, and the total amount of treatment has been six injections of a bismuth preparation intramuscularly.

The patient is fairly well developed, poorly nourished and somewhat apprehensive and agitated. On the back, arms and lower parts of the legs there is soft flexible atrophic scarring of the skin. Over each wrist the skin is somewhat tense and bound to the underlying tissue. In all other scarred areas the skin is loose and freely movable. Posterior to the right shoulder joint is an erythematous scar. On the dorsum of each foot and involving the area over the ankle joint are large ulcers with raised, rolled edges. The surface of these ulcers is dirty and covered with greenish yellow pus. On the left leg from the edge of the ulcer up to just below the knee there is a thick tenacious crust, which leaves a bleeding base when removed.

The cardiovascular and the nervous system are normal.

The Kline diagnostic and exclusion tests and the Wassermann test were all strongly positive. The Wassermann reaction of the spinal fluid was 4 plus with 1 cc. and 1 plus with 0.5 cc. The mastic test gave a normal result. The Pandy test gave a negative reaction, and there were two lymphocytes. The pressure of the fluid was normal. There were 23.3 mg. of proteins per hundred cubic centimeters. Examination of the urine and blood counts showed no essential abnormality. Roentgen examination of the long bones, the hands and the feet showed marked changes, which, it was concluded, indicated syphilitic and neurotrophic lesions of these structures.

Histologic examination of various areas of the involved skin showed the surface to be covered by a thick layer of stratified squamous epithelium, showing a moderate degree of keratinization. The basal layer was fairly thick and extended into the corium as irregular pegs of varying lengths. The cells, however, were of uniform size and staining reaction, and the basement membrane was intact throughout. The underlying corium was made up of young fibrous connective tissue, loosely arranged, and numerous young capillaries, which did not show any remarkable change. The tissue was diffusely infiltrated by a few round cells and

Unusual involvement of the feet in a case of tertiary syphilis.

occasional plasma cells and polymorphonuclear leukocytes. No perivascular infiltration by round cells was observed in any of the sections. Sections stained with Van Gieson's stain and with a stain for acid-fast bacilli did not give any additional information as to the nature of the lesion (fig.).

DISCUSSION

DR. H. N. COLE: Three diseases should be considered: mycetoma, leprosy (atrophy of osseous tissues in the toes, partial destruction or even loss of digits) and syphilis. Rarely has this papillomatous condition of the feet been reported in connection with old syphilitic lesions in cases in which there has been obstruction of lymph channels and chronic edema accompanied with ulceration. Ormsby

spoke of this in his textbook (A Practical Treatise on Diseases of the Skin for the Use of Students and Practitioners, ed. 5, Philadelphia, Lea & Febiger, 1937). I believe this condition belongs in that category, but I am not familiar with these osseous changes and the peculiar configuration of the toes in connection with old syphilis.

DR. JOHN A. GAMMEL: If this condition is mycetoma, it is the first case on record of bilateral involvement. No granules have been seen, and they are necessary to a diagnosis of mycetoma. If the process were unilateral, I should suggest mycetoma.

DR. GARRETT ARTHUR COOPER: Evidently this process on the feet was going on before 1928, for people who knew the patient noted a peculiar gait and that she wore larger and softer shoes and black stockings. A neurologist who saw her thought that since the neurologic examination gave normal results, there must be a lesion in the trophic area which produced the bilateral lesion. Of course there is no possibility of demonstrating such a lesion clinically.

Psoriasis of the Hands and Feet. Presented by DR. GARRETT ARTHUR COOPER.

Adenoma Sebaceum with Malignant Changes. Presented by DR. GARRETT ARTHUR COOPER.

A Case for Diagnosis (Bilateral Symmetric Trophedema of Fingers of Both Hands?). Presented by DR. H. G. MISKJIAN.

Regional Cutaneous Hemosiderosis Associated with Vasomotor Changes. Presented by DR. H. G. MISKJIAN.

Lichen Planus Annularis. Presented by DR. W. F. SCHWARTZ.

Naevus Linearis. Presented by DR. S. C. BOWEN.

A Case for Diagnosis (Linear Lichen Planus?). Presented by DR. E. W. NETHERTON and DR. GEORGE HASKELL CURTIS (by invitation).

Keratosis Pilaris, Unusually Widespread. Presented by DR. GARRETT ARTHUR COOPER.

Book Reviews

Grundriss der Geschlechtskrankheiten. By Karl Zieler, revised by Georg Birnbaum, M.D., Regular Professor of Dermatology at the University of Königsberg, Germany. Third edition, octavo. Price, 4.90 marks. Pp. 213, with 18 illustrations and 1 table. Leipzig, Germany: Georg Thieme, 1938.

Karl Zieler, author of a textbook recently reviewed (Lehrbuch und Atlas der Haut- und Geschlechtskrankheiten, (*Arch. Dermat. & Syph.* **37**:371 [Feb.] 1938), has published the third edition of his compendium, Grundriss der Geschlechtskrankheiten, revised and brought up to date by Georg Birnbaum, a former pupil.

Since gonorrhea is treated by dermatologists on the continent of Europe, the diagnosis and treatment of the disease are thoroughly covered in 55 pages. Although the book is intended for the general practitioner and student, the modern hyperpyrexia treatment of the complications of gonorrhea should also be mentioned. Instead, Birnbaum states that gonococci can be killed in vitro only by high temperatures, but are not destroyed in vivo.

While the discussion of chancroid covers 7 pages, that of lymphogranuloma venereum is given 2 pages only; Frei's name is not mentioned in connection with this disease, although his fundamental discovery is briefly described and other authors are freely quoted elsewhere.

It is an agreeable surprise to see how well the entire subject of syphilis has been covered in the 118 pages. A thorough description of all its cutaneous manifestations is given, which reveals the large personal experience of the author.

While the chapters on description and diagnosis are essentially in agreement with the views of American syphilologists, one must take exception to the outline of treatment. For instance, an abortive cure of seronegative primary syphilis is said to be accomplished by treatment for from one to two months with arsphenamine and bismuth! Also, in view of the work of the Cooperative Clinic Group, it is believed that the continued intermittent type of treatment with periods of rest of from six to eight weeks, as advocated by the author, is not to be recommended. Another doubtful point is the desirability of destroying primary lesions by excision or desiccation, in addition to the regular treatment.

A point to be commended, however, is the emphasis placed on the established therapeutic procedure of intramuscular injections of mild mercurous chloride. It is believed that this method could be used with greater advantage here in conditions resistant to arsphenamine and bismuth. Also, the use of mercurial ointments for the symptomatic treatment of primary and secondary lesions receives due consideration.

There are chapters on the prevention and social importance of venereal diseases, which cover the subject well. The book will admirably serve its purpose—the instruction of general practitioners and students.

Diseases of the Skin. By George Clinton Andrews, M.D. Second edition. Price, $10. Pp. 899, with 938 illustrations. Philadelphia: W. B. Saunders Company, 1938.

In this second edition of his textbook on diseases of the skin Andrews has given major attention to the commoner diseases, which are of prime importance to the student and practitioner for whom it was written. The various diseases are classified and grouped in a satisfactory modern manner, according to etiology, symptomatology, pathology, topography, geography and dynamics. The discussions are clear and concise, the descriptions good and the diagnoses well differentiated.

Treatment is handled dexterously, and the material is up to date. The pathologic considerations are sufficient to explain the clinical appearances, but in most instances not complete or detailed enough to be of any aid in histologic diagnosis.

The 938 illustrations serve to break up the monotony of reading and by their excellence add a great deal to the clarity of the discussions.

The bibliography is scanty; the author probably meant it to be so, since the student wishing references may conveniently get them from the published indexes.

The modern trend of dermatologic textbooks to omit consideration of the acute exanthemas has been followed. Whether this is to be deplored or admired is for the reader to decide.

Basic physical therapy, principally roentgen and radium irradiation, has been adequately covered in the 31 pages allotted to it. The author has given special attention to its application throughout the book, wherever the occasion demanded.

The author's attitude toward a dermatologic problem is typified by his statement that "in the consultation the chief aim is the relief of the patient and not the assigning of a name to his skin disorder."

Errors found in the text and composition include the following: Hematoporphyrin is said not to be found in the urine (page 87); phenol is listed as an acid (page 115); the statement that "henna" causes an eruption like that produced by paraphenylenediamine should read "synthetic henna" (page 121); parakeratosis is rarely found in lichen planus, contrary to the author's statement (page 237); a reference to pompholyx on page 287 should read "p. 776" instead of "p. 277"; line 18 is missing on page 269; "tinea" should have been used as the preferred term for the condition called here "trichophytosis corporis" (page 299); "leptothrix" should read "lepothrix" for trichomycosis axillaris (page 345); the text fails to bring out the fact that chancre redux is a true monorecurrence and pseudochancre redux is a gumma (page 427); in leiomyoma the nuclei are not "fusiform," as stated by Andrews, but rod shaped (page 706).

The publishers are to be congratulated on the excellence of the reproduction of illustrations, the quality of paper and the general appearance of the book. The moderate price and general excellence should make it one of the popular handbooks of the student and practitioner.

Advances in the Therapeutics of Antimony. By Prof. Dr. phil. nat. Hans Schmidt and Dr. med. F. M. Peter, with a preface by Dr. Philip Manson-Bahr, C.M.G., D.S.O., M.D., F.R.C.P. Price, paper, 18 marks; cloth, 19.50 marks. Pp. 251. Leipzig, Germany: Georg Thieme, 1938.

This book is an extensive and commendable work on the use of antimony in both human and veterinary medicine. The history of antimony from the time of the Old Testament, through its periods of favor and disfavor among physicians until the modern era, which began about 1906, is briefly presented.

The main portion is divided into several sections, which consist of abstracts of important papers, the authors' general remarks and conclusions. In the first section the results of the use of the various antimony preparations in the treatment of internal leishmaniasis, cutaneous leishmaniasis, trypanosomiasis, bilharziasis, granuloma inguinale, venereal lymphogranuloma and many other tropical and nontropical diseases are considered. A section is devoted to the use of antimony in veterinary medicine, one to the synthesis of antimony preparations and one to the results of tests on experimental infections in animals. The final section is a pharmacologic discussion of the various antimony preparations.

The results obtained in the treatment of many diseases with both the trivalent preparations of antimony (antimony and potassium tartrate, sodium antimony tartrate, antimosan, fuadin [sodium antimony biscatechal disulfonate] and stibilase) and with the pentavalent preparations (stibenyl, stibosan, neostibosan and solustibosan) are recorded. Proportionate space is devoted to methods of administration, toxicity, reactions produced and schemes of dosage.

Pointing to the fact that internal leishmaniasis responds more satisfactorily to the pentavalent compounds and bilharziasis to the trivalent, the authors emphasize that progress is being made, in that efforts are now being directed toward finding "a rational form of individual treatment for each disease as compared with the hitherto uniform and largely inadequate method with tartar emetic."

Attention is called to the large number and wide variety of infectious diseases, such as those caused by protozoa, helminths, bacteria and ultramicroscopic viruses, which can be influenced by antimony.

In the appendix the probable trend of future investigation of synthetic antimony preparations is discussed. Possibly the most promising new preparation is an arsenostibio compound containing 18 per cent arsenic and 20 per cent antimony. Antimony offers a wide field for both laboratory and clinical research.

Directory of Dermatologic Societies *

INTERNATIONAL

Tenth International Congress of Dermatology and Syphilology

Oliver S. Ormsby, President, 25 E. Washington St., Chicago.
Paul A. O'Leary, Secretary-General, 102–2d Ave., S. W., Rochester, Minn.
Place: New York. Time: Summer 1940.

Pan American Medical Association, Section of Dermatology and Syphilology

Elmore B. Tauber, President, 19 W. 7th St., Cincinnati.
Austin W. Cheever, Secretary, 49 Bay State Rd., Boston.

FOREIGN

British Association of Dermatology and Syphilology (Canadian Branch)

Harold Orr, President, 10189–101st St., Edmonton.
Don Mitchell, Secretary-Treasurer, 1414 Drummond St., Montreal.

Royal Society of Medicine, Section of Dermatology

H. W. Barber, President, 7 Devonshire Pl., London, W. 1., England.
Louis Forman, Secretary, 7 Devonshire Pl., London, W. 1, England.

NATIONAL

American Medical Association, Scientific Assembly, Section on Dermatology and Syphilology

J. Bedford Shelmire, Chairman, 1719 Pacific Ave., Dallas, Texas.
C. F. Lehmann, Secretary, 705 E. Houston St., San Antonio, Texas.
Place: St. Louis. Time: May 15-19, 1939.

American Academy of Dermatology and Syphilology

Paul A. O'Leary, President, Mayo Clinic, Rochester, Minn.
Earl D. Osborne, Secretary, 471 Delaware Ave., Buffalo, N. Y.
Place: Philadelphia.

American Board of Dermatology and Syphilology

Howard Fox, President, 140 E. 54th St., New York.
C. Guy Lane, Secretary-Treasurer, 416 Marlborough St., Boston.
Place: St. Louis. Time: Nov. 11-12, 1938.

American Dermatological Association

Francis E. Senear, President, 55 E. Washington St., Chicago.
Fred D. Weidman, Secretary, University of Pennsylvania, Philadelphia.
Place: Seigniory Club, Montebello, Ontario, Canada. Time: May 1939.

Society for Investigative Dermatology

Joseph V. Klauder, President, 1934 Spruce St., Philadelphia.
S. W. Becker, Secretary, University of Chicago, Department of Medicine, Chicago.

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* Secretaries of dermatologic societies are requested to furnish the information necessary for the editor to make this list complete and to keep it up to date.

SECTIONAL

Central States Dermatological Association

George H. Belote, President, University Hospital, Ann Arbor, Mich.
Thomas H. Miller, Secretary-Treasurer, 1305 David Whitney Bldg., Detroit.

Mississippi Valley Dermatological Society

A. H. Conrad, President, 3720 Washington Blvd., St. Louis.
Roy L. Kile, Secretary-Treasurer, 3720 Washington Blvd., St. Louis.

New England Dermatological Society

Fred S. Burns, President, 83 Marlborough St., Boston.
B. Appel, Secretary, 483 Beacon St., Boston.

Northern New Jersey Dermatological Society

Francis McCauley, President, 31 Lincoln Pk., Newark.
Henri Abel, Secretary, 339 Union Ave., Elizabeth.
Place: Academy of Medicine of Northern New Jersey, Newark. Time: Third Tuesday of March, April, October and December.

Southeastern Dermatological Association

J. L. Kirby-Smith, Chairman, 204 Laura St., Jacksonville, Fla.
Joseph A. Elliott, Secretary, Professional Bldg., Charlotte, N. C.

Southern Medical Association, Section on Dermatology and Syphilology

M. Toulmin Gaines, Chairman, 404 Merchants National Bank Bldg., Mobile, Ala.
Clinton W. Lane, Secretary, 508 N. Grand Ave., St. Louis.

STATE

California Medical Association, Scientific Assembly, Dermatology and Syphilology Section

Norman N. Epstein, Chairman, 450 Sutter St., San Francisco.
Arne E. Ingels, Secretary, 490 Post St., San Francisco.

Connecticut State Medical Society, Section on Dermatology

James D. Gold, Chairman, 839 Myrtle Ave., Bridgeport.
Albert Levenson, Secretary, 881 Lafayette St., Bridgeport.

Florida Society of Dermatology and Syphilology

Elmo D. French, Chairman, Huntington Bldg., Miami.
Lauren M. Sompayrac, Secretary, 459 St. James Bldg., Jacksonville.

Louisiana Dermatological Society

M. T. Van Studdiford, President, 912 Pere Marquette Bldg., New Orleans.
R. A. Oriol, Secretary-Treasurer, 921 Canal St., New Orleans.

Massachusetts Medical Society, Section on Dermatology and Syphilology

George A. Dix, President, 6 Ashland St., Worcester.
J. Harper Blaisdell, Secretary, 45 Bay State Rd., Boston.

Medical Society of the State of New York, Section on Dermatology and Syphilology

Mark Heiman, Chairman, 600 Medical Arts Bldg., Syracuse.
Timothy J. Riordan, Secretary, 136 E. 64th St., New York.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA
SECTION ON DERMATOLOGY

L. G. Beinhauer, Chairman, 5026 Jenkins Arcade Bldg., Pittsburgh.
V. C. Garner, Secretary, Germantown Professional Bldg., Philadelphia.

MICHIGAN STATE MEDICAL SOCIETY, SECTION ON DERMATOLOGY AND SYPHILOLOGY

Ruth Herrick, Chairman, 26 Sheldon Ave., S. E., Grand Rapids.
Eugene A. Hand, Secretary, 801 Second National Bank Bldg., Saginaw.

MINNESOTA DERMATOLOGICAL SOCIETY

L. A. Brunsting, President, 102–2d Ave., S. W., Rochester.
F. W. Lynch, Secretary-Treasurer, Lowry Medical Arts Bldg., St. Paul.
Time: First Friday in October, December, February and April.

OKLAHOMA STATE DERMATOLOGICAL SOCIETY

Onis George Hazel, President, Osler Bldg., Oklahoma City.
Everett S. Lain, Secretary, Medical Arts Bldg., Oklahoma City.

TEXAS DERMATOLOGICAL SOCIETY

Everett R. Seale, President, 1215 Walker Ave., Houston.
Duncan O. Poth, Secretary, 414 Navarro St., San Antonio.

LOCAL

BALTIMORE-WASHINGTON DERMATOLOGICAL SOCIETY

Francis A. Ellis, President, 104 W. Madison St., Baltimore.
I. Louis Sandler, Secretary, 1835 I St., N. W., Washington, D. C.
Place: Alternate cities. Time: Third Thursday of each month.

BRONX DERMATOLOGICAL SOCIETY

Samuel M. Peck, President, 125 E. 72d St., New York.
Henry Silver, Secretary, 290 West End Ave., New York.

BROOKLYN DERMATOLOGICAL SOCIETY

M. J. Cantor, President, 907 St. Marks Ave., Brooklyn.
S. H. Silvers, Secretary, 920 Bushwick Ave., Brooklyn.
Time: Third Monday of each month except June, July, August and September.

BUFFALO-ROCHESTER DERMATOLOGICAL SOCIETY

Clarence H. Peachey, President, 197 S. Goodman St., Rochester, N. Y.
Richard L. Saunders, Secretary, 333 Linwood Ave., Buffalo.

CENTRAL NEW YORK DERMATOLOGICAL SOCIETY

Rudolph Ruedemann Jr., President, 256 State St., Albany.
Harry D. Parkhurst, Secretary-Treasurer, 264 Genesee St., Utica.

CHICAGO DERMATOLOGICAL SOCIETY

Hamilton Montgomery, President, Mayo Clinic, Rochester, Minn.
Herbert Rattner, Secretary, 25 E. Washington St., Chicago.
Place: Chicago. Time: Third Wednesday in January 1938.

CINCINNATI DERMATOLOGICAL SOCIETY

Adolph B. Loveman, President, 332 W. Broadway, Louisville, Ky.
Daniel J. Kindel, Secretary-Treasurer, Union Central Bldg., Cincinnati.
Place: Cincinnati. Time: First Wednesday of each month, except June, July, August and September.

Cleveland Dermatological Society

John Gammel, President, 1020 Huron Rd., Cleveland.
Charles G. La Rocco, Secretary, 2060 E. 9th St., Cleveland.

Detroit Dermatological Society

G. Warren Hyde, President, 2501 W. Grand Blvd., Detroit.
Thomas H. Miller, Secretary-Treasurer, 1305 David Whitney Bldg., Detroit.
Place: Detroit. Time: May 1939.

Los Angeles Dermatological Society

Thomas W. Nisbet, President, 65 N. Madison Ave., Pasadena, Calif.
C. R. Caskey, Secretary, 1930 Wilshire Blvd., Los Angeles.
Time: Second Tuesday of each month, October to May, inclusive.

Manhattan Dermatologic Society

Max Scheer, Chairman, 509 Madison Ave., New York.
Anthony C. Cipollaro, Secretary, 40 E. 61st St., New York.

Montreal Dermatological Society

L. P. Ereaux, President, 1390 Sherbrooke St., W., Montreal, Canada.
Paul Poirier, Secretary, 456 Sherbrooke St., E., Montreal, Canada.

New York Academy of Medicine, Section of Dermatology and Syphilis

Eugene F. Traub, Chairman, 140 E. 54th St., New York.
Louis Tulipan, Secretary, 224 E. 17th St., New York.

New York Dermatological Society

J. Frank Fraser, President, 100 W. 59th St., New York.
Frank C. Combes, Secretary, 80 W. 40th St., New York.

Omaha Dermatological Society

Donald J. Wilson, President, 1113 Medical Arts Bldg., Omaha.
Leonard J. Owen, Secretary-Treasurer, 954 Stuart Bldg., Lincoln, Neb.

Philadelphia Dermatological Society

Thomas Butterworth, Chairman, 411 Walnut St., Reading, Pa.
Herman Beerman, Secretary, 255 S. 17th St., Philadelphia.
Time: Third Friday of each month from September to May, inclusive.

Pittsburgh Dermatological Society

John C. Kerr, President, 62 14th St., Wheeling, W. Va.
Marvin B. Goldstein, Secretary, Stambaugh Bldg., Youngstown, Ohio.

St. Louis Dermatological Society

Martin F. Engman, President, 3720 Washington Blvd., St. Louis.
Roy L. Kile, Secretary-Treasurer, 3720 Washington Blvd., St. Louis.
Place: Barnard Free Skin and Cancer Hospital. Time: 2 p. m., second Wednesday of each month.

San Francisco Dermatological Society

Norman Epstein, President, 450 Sutter St., San Francisco.
H. V. Allington, Secretary, 3115 Webster St., Oakland, Calif.
Place: San Francisco. Time: Third Friday of November 1937.

INDEX TO VOLUME 38

The asterisk (*) preceding the page number indicates an original article in the Archives. Subject entries are made for all articles. Author entries are made for original articles and society transactions. Book Reviews, Obituaries and Society Transactions are indexed under these headings in their alphabetical order under the letters B, O and S, respectively.

Abnormalities and Deformities: See under names of diseases, organs and regions, as Atrophy; Ectodermal defect; Forearm, abnormalities; Skin, abnormalities; etc.

Abou-Laghif: See Syphilis

Abramowitz, E. W.: Erythema annulare centrifugum (Darier), case for diagnosis, 111
Tinea barbae, case for diagnosis, 661
Xanthomatosis (generalized); hepatomegaly associated with jaundice; tertiary syphilis, 468

Abscess: See also under names of organs and regions
multiple draining periurethral sinuses, case for diagnosis, 648
tuberculous, 799

Acanthosis nigricans or papillomatose réticulée (Gougerot), 666

Acetarsone, fixed eruption due to, 467
Therapy: See Amebiasis; Syphilis

Acetyl-Beta-Methylcholine: See Choline and Choline Derivatives

Acid, Acetylsalicylic: See Salicyl Compounds
Arachidonic: See Blood, fatty acids
Ascorbic: See Vitamins, C
Fatty: See Blood, fatty acids
Linolic: See Blood, fatty acids
Tannic: See Burns; Tannin

Acne; acneform iododerma (iodized salt), 966
agminata; acne on seborrheic background (acnitis?), 987
agminata; acnitis, 1007
diagnostic and therapeutic use of tuberculin in certain acneform eruptions, *737
gonadotropic substance in treatment of, 441
rosacea, recurrent dermatitis of face and hands, light sensitivity or pellagrinous dermatitis, 994
rosacea; rosacea keratitis, 135
urticata polycythaemica, 145
varioliformis, successfully treated with staphylococcus toxoid, 122
vulgaris, "acne mixed" undenatured bacterial antigen in treatment of, *405
with hematomas, case for diagnosis, 89

Acnitis: See Acne, agminata

Acrodermatitis chronica atrophicans, 650, 991

Acrodynia, racial incidence of, 253

Acromegaly, case of xanthoma diabeticorum associated with diabetes mellitus and acromegaly, 782

Actinomycosis, 139
thymol therapy in, 254

Addison's Disease or chloasma, 289
transplantation of adrenal tissue in, 638

Adenitis: See Lymph Nodes

Adenoma, adrenal cortical adenoma with absence of opposite adrenal, 79
Cushing's syndrome (basophilic adenoma of pituitary gland), 490
Cushing's syndrome (early), 491
multiple benign cystic epithelioma or adenoma sebaceum in mother and daughter, 2 cases for diagnosis, 986

Adenoma—Continued
sebaceum, 100
sebaceum and its role in neurocutaneous syndrome; tuberous sclerosis and its relationship to Recklinghausen's disease, 964
sebaceum in epileptic moron, 147
sebaceum (Pringle type), associated with Recklinghausen's disease, 669

Adipose Tissue: See Fat

Adrenals, adrenal cortical adenoma with absence of opposite adrenal, 79
cutaneous dystrophy and obesity of adrenal origin, 256
hirsutism, 260
transplantation of adrenal tissue in Addison's disease, 638

Agranulocytosis: See Angina, agranulocytic

Ainhum, case of inherited ainhum-like hyperkeratosis, *26

Albinism: See also Vitiligo
complete, 130

Albuminuria in association with scabies; review of literature and report of urinalyses in 216 cases, *19

Alderson, H. E.: Multiple hypertrophic scars in child 4 years old, 502
Panniculitis, case for diagnosis, 493

Allergy: See Anaphylaxis and Allergy

Allington, H. V.: Alopecia areata, 137
Yellowish red scaling areas of ankle, case for diagnosis, 1003

Alopecia areata, 137
cicatrisata; lupus erythematosus or pseudopelade of Brocq, 508
cicatrisata; pseudopelade of Brocq, case for diagnosis, 506
loss of hair as symptom of masculinization in woman, 444
traumatic, 443
universalis and leukoderma acquisitum centrifugum, 263

Amebiasis, flaccid paralysis following treatment of amebic dysentery with acetarsone, 257

Amyotrophy: See Atrophy, muscular

Anaphylaxis and Allergy: See also Milk, allergy; and under names of various diseases, as Asthma; Eczema; Rhus; etc.
calcium ion concentration of serum in allergic diseases, 781
citrus fruit dermatoses, *225
contact and environmental allergens as cause of eczema in infants and in children, *511
device for "continuous" patch tests, *619
inheritance of allergic disease, 255
routine patch tests, *951
susceptibility of allergic and nonallergic persons to rhus toxicodendron, *773
urticaria; new immunologic wheal produced experimentally by reverse technic, *1

Anderson, H. F.: Fulminating acute lupus erythematosus cured by sulfanilamide, *621

Anderson, N. P.: Dermatophytosis (hands, feet and toe nails) due to Trichophyton purpureum, 646
Keloid, case for diagnosis, 644

Anderson, S.: Lupus vulgaris (hypertrophic), 644

Andrews, G. C.: Multiple idiopathic hemorrhagic sarcoma of Kaposi, 452
Nonpigmented melanoma, 656

Androgens, excretion of androgenic and estrogenic substances in urine of children, 784
treatment of sexual underdevelopment with synthetic male hormone substance, 638
Anemia, ulcers of leg, associated with sickle cell anemia, in sisters, 1006
Angina, agranulocytic; experimental investigation of agranulocytosis due to arsphenamine, 85
Vincent's; scleredema adultorum (Buschke) with involvement of muscles in 11 year old boy, 634
Angiokeratoma, 157, 455
Angioma, cavernous, of feet, 99, 803
of cheek, 972
Angiosarcoma of hand and arm, 659
Anhidrosis: See Sweat Glands
Ankle, yellowish red scaling areas of ankle, case for diagnosis, 1003
Anuria: See Urine, suppression
Anus: See also Rectum
Paget-like disease of circumanal skin and carcinoma of rectum, 811
Aortic Valve, staphylococcic endocarditis superimposed on syphilitic aortic endocarditis, 785
Aortitis, studies in cardiovascular syphilis; effect of occupation on incidence and type of syphilitic aortitis, 782
studies in cardiovascular syphilis; incidence of syphilitic aortitis, 636
studies in syphilitic cardiovascular disease; uncomplicated syphilitic aortitis; asymptomatic condition, 438
Apparatus, active sweat glands; method for their study, *340
Argyria: See under Silver
Arnold, E.: Lymphogranuloma venereum especially its treatment with sulfanilamide, *705
Arnold, H. L., Jr.: Scleredema adultorum (Buschke), *210
Arsenic and Arsenic Compounds: See also Acetarsone; Arsphenamines; Tryparsamide
arsenical dermatitis produced in treatment of trichomonas vaginitis; report of 5 cases, *198
arsenical lichen planus-like dermatitis, 968
dermatitis herpetiformis; arsenical keratosis, 264
flaccid paralysis following treatment of amebic dysentery with acetarsone, 257
lichenoid arsenical dermatitis, 472
linear eruption resembling lichen planus in syphilitic patient with arsenical dermatitis, 659
nitritoid reaction following injection of tryparsamide, *949
postarsphenamine jaundice, 636
Arsphenamines: See also under Syphilis
atrophy and postarsphenamine dermatitis, 822
Castelli's dissertation on biologic test of arsphenamine preparations, 84
dermatitis medicamentosa (arsphenamine) in patient under treatment for syphilis, 104
dermatitis medicamentosa (neoarsphenamine) of lichenoid type, 114
electrolytes of blood and urine of dogs with acute hepatic injury produced by, 635
experimental dermatitis; influence of vitamin C in production of arsphenamine sensitiveness, 254
experimental investigation of agranulocytosis due to, 85
fixed eruption following injection of neoarsphenamine, 499
fixed eruption in patient sensitive to arsphenamine and phenolphthalein in different areas, 474
influence of arsphenamine and syphilis on function of reticuloendothelial system and liver; influence of arsphenamine on function of liver, 85
Arsphenamines—Continued
medical shock following intravenous therapy with neoarsphenamine, 782
pigmentation following treatment with arsphenamine and bismuth or erythrose péribuccale pigmentaire de Brocq, 670
postarsphenamine exfoliative dermatitis; etiology, complications and treatment, 80
Aschoff-Klinge Nodule: See Rheumatic Fever
Asthma: See also Anaphylaxis and Allergy
and atopic eczema with bilateral cataract, 130
psychologic factors in asthma-prurigo, 959
Astrachan, G. D.: Mapharsen in treatment of congenital syphilis, *943
Nitritoid reaction following injection of tryparsamide, *949
Atrophoderma: See Atrophy
Atrophy: See also Acrodermatitis chronica atrophicans; Poikiloderma atrophicans vasculare; and under names of organs and regions
and postarsphenamine dermatitis, 822
Bowen's disease in association with radium-induced atrophy of skin, 88
macular (Schwenninger-Buzzi type), 116, 117, 467
macular, secondary to syphilis, 467, 504
macular, with hyperpigmentation (superficial scleroderma?), 832
muscular; amyotrophia syphilitica with subcutaneous fibroid nodules, 133
Avitaminoses: See under Vitamins
Ayres, S., Jr.: Acquired progressive kinking of scalp hair with changes in its pigmentation, 648
Blue nevus (face); "mongolian spots" (sacrum), 483
Localized argyria following treatment of burn with tannic acid and silver nitrate, 645

BCG: See under Tuberculosis
Bacteria: See Staphylococci; Streptococci; Viruses; etc.
Bacterid, pustular (Andrews), 664
Baldness: See Alopecia
Bancroft, I. R.: Syphilis or mycosis fungoides, 647

Barker, L. P.: Angiokeratoma, 455
Barney, R. E.: Lupus vulgaris, 791
Bazin's Disease: See Erythema induratum
Bechet, P. E.: Acneform iododerma (iodized salt), 966
Disseminate multiple epitheliomatosis of skin with possible prickle cell changes in 1 of lesions, 91
Linear eruption resembling lichen planus in syphilitic patient with arsenical dermatitis, 659
Lupus erythematosus discoides with spread of lesions after ultraviolet irradiation, 114
Lupus erythematosus of scalp simulating burn with acid, 971
Psoriasis or pityriasis rubra pilaris, 92
Severe ichthyosis in Negro, 663
Tuberculous abscesses, 799
Becker, S. W.: Erythema palmare as part of generalized telangiectasis during pregnancy, 836
Herpes zoster, 835
Macular atrophy with hyperpigmentation (superficial scleroderma?), 832
Beerman, H.: Citrus fruit dermatoses, *225
Behn, C. W.: Calcinosis circumscripta, 307
Case for diagnosis, 294, 295, 309, 321
Tuberculosis, case for diagnosis, 293
Bejel: See Syphilis
Belote, G. H.: Necrobiosis without diabetes, 311
Scleredema adultorum (Buschke), 305
Benedek, T.: Granuloma annulare, 280

Berberian, D. A.: Dermatophytosis of feet: sources and methods of prevention of reinfection, *367
Mycologic technic for study of anascosporous yeastlike fungi, *526
Berkoff, H. S.: Contact dermatitis from "horn-rimmed" spectacles; report of case, *746
Berkovsky, M.: Complete albinism, 130
Bernstein, J. C.: Mycosis fungoides, case for diagnosis, 143
Besancon, J. H.: Calcinosis circumscripta, 307
Case for diagnosis, 294, 295, 309
Leiomyoma cutis, 324
Lupus erythematosus, 319
Tuberculosis, case for diagnosis, 293
Besnier-Boeck's Disease: See Sarcoid
Binkley, G. W.: Mouse brain lymphogranuloma venereum antigen; clinical experience at Cleveland City Hospital, *383
Ocular pemphigus or essential shrinkage of conjunctiva, 135
Rosacea keratitis, 135
Biopsy, value and limitations in dermatology, *329
Bismuth and Bismuth Compounds, clinical excretion of bismuth; fecal and total excretion, 439
clinical excretion of bismuth; late excretion of bismuth after cessation of treatment, 440
clinical excretion of bismuth; urinary excretion of bismuth after clinical intramuscular injections of sodium iodobismuthite (sodium bismuth iodide, iodobismitol) and sodium bismuth thioglycollate (thiobismol), 439
in Urine: See under Urine
pigmentation following treatment with arsphenamine and bismuth or erythrose péribuccale pigmentaire de Brocq, 670
suggested specifications for bismuth subsalicylate in oil, 957
Therapy: See under names of various diseases, i. e., Lupus erythematosus; Syphilis; etc.
toxic effects of bismuth with reference to renal damage and report of case of anuria, 957
Blastomycosis, 500. See also Coccidioides; Moniliasis; Torula
chromoblastomycosis caused by fungus of genus Hormodendron, *12
coccidioidal granuloma and paracoccidioidal granuloma; comparative study of North American, South American and European organisms and clinical types, *163
Blatt, M. L.: Dermatitis gangraenosa infantum, *407
Blindness, syphilis in relation to prevention of; study of 100,000 case records, 638
Blood, calcium ion concentration of serum in allergic diseases, 781
cholesterol; hypercholesteremic splenomegaly with xanthomatosis and dermatitis herpetiformis, 145
cholesterol in syphilis, 635
Diseases: See Anemia; Leukemia; etc.
electrolytes of blood and urine of dogs with acute hepatic injury produced by arsphenamine, 635
fatty acids; arachidonic and linolic acid of serum in normal and eczematous human subjects, 254
lipase and eczema, 444
pepsin of serum in experimental dermatitis, 643
sedimentation; contribution to knowledge of lymphogranuloma venereum; erythrocyte sedimentation test, 963
Bloom, D.: Arsenoresistant psoriasiform syphilid, 653
Epidermolysis bullosa hereditaria, 472
Glomus tumor, case for diagnosis, 108
Bloom, D.—Continued
Kaposi's sarcoma, case for diagnosis, 472
Lupus erythematosus of conjunctiva, 671
Lupus erythematosus treated by general radiologist, 114
Mycosis fungoides, case for diagnosis, 124
Pustular psoriasis, 664
Scleroderma and hypertrichosis in child, 473
Blumenthal, F.: Bourneville-Pringle's disease, 314
Bourneville-Pringle's disease in patient whose right eye was enucleated because of intraocular tumor, 813
Bowen's dermatosis and multiple basal cell epithelioma, 807
Case for diagnosis, 805
Disseminate tuberculosis of face (mixed type), 810
Disseminated hematogenous tuberculosis of lupus tumidus type, 292
Granulomatous inflammation of palate, case for diagnosis, 804
Grouped nodular tuberculids (Jadassohn), 293
Lymphedema of eyelids; recurrent erysipelas; congenital syphilis, 814
Lymphedema of upper lip, 814
Naevus anaemicus, 813
Paget-like disease of circumanal skin and carcinoma of rectum, 811
Pityriasis rubra pilaris, 809
Poikiloderma with calcinosis universalis due to dermatomyositis progressiva, 307
Psoriasis guttata of skin and oral mucosa, 808
Psoriasis of oral mucosa; pigmented psoriasis, 808
Seronegative tertiary syphilis or lupus vulgaris, 806
Syringocystadenoma multiplex, 809
Tinea amiantacea, 807
Boeck's Sarcoid: See Sarcoid
Bones, Recklinghausen's disease with nevi, deformity of bone and tumefaction of soft tissue, 672
sarcoidosis (Besnier-Boeck-Schaumann syndrome) involving skin, lymph nodes, bones and tendon sheaths, 457
syphilis; syphilitic osteitis, 2 cases, 86
Book Reviews:
Advances in Therapeutics of Antimony; H. Schmidt and F. M. Peter with preface by P. Manson-Bahr, 1015
Approved Laboratory Technic; J. A. Kolmer and F. Boerner, 162
Chaulmoograöl; H. Schlossberger, 674
Diseases of Skin; G. C. Andrews, 1014
Grundriss der Geschlechtskrankheiten; K. Zieler, revised by G. Birnbaum, 1014
Manual of Cosmetics; C. Lázár, 162
Bordet-Wassermann Reaction: See under Syphilis
Bouillaud's Disease: See Rheumatic Fever
Bourneville-Pringle's Disease: See Sclerosis, tuberous
Bouton, S. M., Jr.: Serologic paradox in juvenile dementia paralytica; report of case, *595
Bowen's Disease: See Cancer, precancer
Brain: See also Nervous System
Syphilis: See under Syphilis
torula infection of central nervous system, 79
Bregman, A.: Treatment of erythema multiforme exsudativum with sulfanilamide; report of case, *623
Brocq's Disease: See Alopecia cicatrisata
Bromide and Bromine; bromoderma, 278
Bromoderma: See Bromide and Bromine
Brown, E.: Argyria under treatment, 276
Brown, M.: Mycosis fungoides; syphilis, 995
Buley, H. M.: Active sweat glands; method for their study, *340

Burns, compound solution of tannic acid, 81
localized argyria following treatment of burn with tannic acid and silver nitrate, 645
lupus erythematosus of scalp simulating burn with acid, 971

Buschke's Disease: See Scleroderma

Butterworth, T.: Adenoma sebaceum in epileptic moron, 147
Darier's disease, 147
Incidence of diseases of skin in feebleminded persons, *203
Osteoma cutis, case for diagnosis, 983

Calcification: See also Ear, calcification
calcified syringoma, 259
calcinosis circumscripta, 307
calcinosis cutis, 828
calcinosis universalis, 260
in scar tissue, 267
poikiloderma with calcinosis universalis due to dermatomyositis progressiva, 307
scleroderma with calcinosis (Thibierge-Weissenbach syndrome), 440

Calcinosis: See Calcification

Calcium in Blood: See under Blood

Callaway, J. L.: Citrus fruit dermatoses, *225

Cameron, O. J.: Juvenile pemphigus; effects of germanin in 3 cases, *555

Cancer: See also Sarcoma; Tumors; and under names of organs and regions, as Anus; Lips; Pancreas; Scrotum; etc.
and human races, 78
and skin irritation in U. S. Navy, 635
cells; further observations on macronucleolus of cancer, 781
close roentgen radiation with Chaoul tube in cutaneous carcinoma and chancroid, 83
cutaneous, treatment with concentrated fractional near irradiation, according to method of Chaoul, 444
intrinsic factors in etiology of neoplasms, 634
metastases in squamous-cell carcinoma, 78
precancer; Bowen's dermatosis and multiple basal cell epithelioma, 807
precancer; Bowen's disease in association with radium-induced atrophy of skin, 88
precancer; Bowen's disease with metastases (epithelioma of Bowen), *191
precancer; production of epithelial tumors by irradiation of precancerous skin lesion, 438
theory of developmental physiology of malignant tumors, 781

Cañizares, O.: Evaluation of Frei test mouse brain antigen; comparison with human antigen, *930

Cannon, A. B.: Acne with hematomas, case for diagnosis, 89
Atrophy; postarsphenamine dermatitis, 822
Chancre of lip resembling epithelioma, 817
Granuloma inguinale, 826
Gumma (right leg) with secondary infection, 93
Keratosis follicularis (Darier's disease), 824
Leprosy, 825
Lichen scrofulosorum and sarcoid, 91
Lupus vulgaris, 818
Pemphigus foliaceus, 825
Pemphigus or iododerma, 821
Sarcoid or leprosy, 820
Tuberculous cervical adenitis; erythema nodosum, 823

Cantharides, investigation on resorption of substances by skin and mucous membranes, 962

Capillaries: See also Skin, blood supply
changes in blood vessels (capillary fragility) with inflammation, 786
tuberculosis of skin or capillaritis, 1009

Carcinoma: See Cancer

Cardiovascular Diseases, cooperative clinical studies in treatment of syphilis; effect of specific therapy on prophylaxis and progress of cardiovascular syphilis, 254

Cardiovascular Diseases—Continued
studies in cardiovascular syphilis; influence of treatment of early syphilis on incidence of cardiovascular syphilis, 956
syphilis, 785
syphilis, early diagnosis, 958
syphilis, mapharsen in treatment, 958

Caro, M. R.: Calcinosis cutis, 828
Multiple idiopathic hemorrhagic sarcoma (Kaposi), 277

Carotene, seborrheic keratoses (carotenoid pigmentation?), 123

Caseinogen: See Milk, allergy

Cataract and neurodermatitis disseminata, 323
atopic eczema and asthma with bilateral cataract, 130

Cells, further observations on macronucleolus of cancer, 781

Cerebrospinal Fluid, question of positive fluid in first year of syphilitic infection; incidence, prognosis and therapy, 257

Chambers, S. O.: Clinical application of stain for spirochetes (Krajian), *217
Lupus vulgaris (hypertrophic), 644

Chancre of lip resembling epithelioma, 817
or chancroid, 453
Soft: See Chancroid
tuberculous, 646

Chancroid; chancre? 453
chancroidal ulcer of long duration cured with sulfanilamide, 660
close roentgen radiation with Chaoul tube in cutaneous carcinoma and chancroid, 83
cured with sulfanilamide, 509
cured with sulfanilamide; lymphogranuloma venereum; syphilis, 476
diagnosis; use of Ducrey vaccine in diagnosis, 956
lymphogranuloma venereum and syphilis, 130
phagedenic, case for diagnosis, 660

Charache, H.: Squamous cell epithelioma in psoriatic patches, *241, 780

Chargin, L.: Adenoma sebaceum (Pringle type), associated with Recklinghausen's disease, 669
Chancroid, cured with sulfanilamide; lymphogranuloma venereum; syphilis, 476
Erythrasma (generalized), 819
Fixed eruption due to acetarsone, 467
Fixed eruption in patient sensitive to arsphenamine and phenolphthalein in different areas, 474
Macular atrophy secondary to syphilis? 467
Multiple basal cell epithelioma, part of 1 lesion changing to fungating tumor, 824
Syringocystoma, 455

Cheek, angioma of, 972
large epithelioma of cheek; report of case, *902

Cheilitis: See under Lips

Chickenpox, mechanism of herpes zoster and its relation to, 82
varicella gangrenosa due to Streptococcus pyogenes, 442

Chloasma: See Pigmentation, cutaneous

Cholesterol in Blood: See Blood, cholesterol

Choline and Choline Derivatives, human autonomic pharmacology; general and local sweating produced by acetyl-beta-methylcholine chloride (mecholyl), 438

Christian-Schüller Syndrome: See Schüller-Christian Syndrome

Christian-Weber's Disease: See Panniculitis

Chromoblastomycosis: See Blastomycosis

Cicatrix, calcification in scar tissue, 267
extensive xanthoma tuberosum in childhood due to infectious cirrhosis of liver, 253
multiple hypertrophic scars in child 4 years old, 502
nevi or atrophic scar, 140

Cipollaro, A. C.: Granuloma annulare, 110
Lichen planus or lupus erythematosus, 111
Parapsoriasis with beginning mycosis fungoides, 656

Clarke, J. A., Jr.: Susceptibility of allergic and nonallergic persons to rhus toxicodendron, *773

Cobane, J. H.: Acute lupus erythematosus, 320
Calcinosis circumscripta, 307
Case for diagnosis, 294, 295, 309
Tuberculosis, case for diagnosis, 293

Coccidioides, blastomycosis, coccidioidal granuloma and paracoccidioidal granuloma; comparative study of North American, South American and European organisms and clinical types, *163
coccidioidal granuloma, 484, 499
prognostic significance of cutaneous lesions in coccidioidal granuloma, *752

Cold, urticaria provoked by heat or by psychic stimuli, *679

Cole, H. N.: Giant cell tumor of epulis type, case for diagnosis, 794
Tabes dorsalis; cooperative clinical studies in treatment of syphilis, *692

Cole, L. R.: Survey of syphilis among students at University of Wisconsin, *70

Colitis, gangrenous pyoderma accompanied with hemorrhagic colitis, 478
pyogenic lesions of skin associated with chronic ulcerative colitis, 829

Combes, F. C.: Cavernous angioma of feet, 99, 803
Erythroplasia of Queyrat, case for diagnosis, 802
Multiple neuromas, case for diagnosis, 102
Parapsoriasis en plaques, case for diagnosis, 798
Perichondritis nodularis chronica or epithelioma, 87
Report on case of probable pemphigus vulgaris, 803
Sclerodactylia following injury, 976

Congress: See under Societies

Conjunctiva, argyria confined to bulbar conjunctivas, 654
argyria, lupus erythematosus of scalp and essential shriveling of conjunctiva (ocular pemphigus) with involvement of all mucous membranes, 151
discoid lupus erythematosus involving palpebral conjunctiva, 287
essential shriveling of conjunctiva (ocular pemphigus); pemphigus of mucous membranes, 988
lupus erythematosus of, 671
ocular changes in Besnier-Boeck's disease, further contributions, 83
ocular pemphigus or essential shrinkage of conjunctiva, 135
pemphigus of conjunctivas and of mucous membranes of mouth and genitalia, 133

Conjunctivitis, syphilitic, 257

Cooper, G. A.: Cutaneous horn in Negro, 1007
Mycosis fungoides, case for diagnosis, 793
Tertiary syphilis with unusually extensive involvement, 1011

Cormia, F. E.: Syphilitic onychia; report of case in which ungual changes helped to establish diagnosis and time of syphilitic infection, *432

Cornbleet, T.: Hodgkin's disease with generalized pruritus, 832
Kaposi's sarcoma, 827
Pruritus (generalized); enlarged prostate; urinary retention, 282
Tertiary syphilis (extensive), 279
Tuberculosis cutis (scrofuloderma, sarcoid and lichen scrofulosorum), 272

Cornea, Inflammation: See Keratitis

Cornell, V. A.: Mapharsen in treatment of congenital syphilis, *943

Corson, E. F.: Favus (familial infection), 144
Trichostasis spinulosa, *363

Cosmetics: See also Lipstick
cosmetic irritants, *906

Costello, M. J.: "Acne mixed" undenatured bacterial antigen in treatment of acne vulgarus, *405
Argyria confined to bulbar conjunctivas, 654
Herpes gestationis, 655
Koilonychia, 113
Pityriasis rosea sparing tanned areas of skin (bathing trunk distribution), *75
Pyogenic ulceration of nose, case for diagnosis, 106

Cotton Industry, study of fatal cases of cancer of scrotum from 1911 to 1935 in relation to occupation with reference to chimney sweeping and cotton mule spinning, 781

Crawford, G. M.: Psoriasis of nails, *583

Cross, F. E.: Prurigo nodularis, case for diagnosis, 127

Cummins, L. J.: Relapsing febrile nodular nonsuppurative panniculitis (Weber-Christian disease); report of 2 cases, *415

Curtis, G. H.: Acnitis, 1007
Sarcoid; case for diagnosis, 1008
Sporotrichosis (disseminated subcutaneous type), 131

Cushing Syndrome: See under Pituitary Body

Cutis Elastica: See under Skin
Hyperelastica: See under Skin
Laxa: See Skin, abnormalities

Cysticercus; luetic pseudo-cysticercosis, 641

Cysts: See under Mucous Membrane; Sebaceous Glands; etc.

Darier, Jean, 625

Darier's Disease: See Keratosis follicularis

Davis, M. I.: Zosteriform lichen planus, *615

Death, cause in tularemia, 79

Decker, H. B.: Hypercholesteremic splenomegaly with xanthomatosis and dermatitis herpetiformis, 145
Susceptibility of allergic and nonallergic persons to rhus toxicodendron, *773

Deficiency Diseases: See also Vitamins
vitamin deficiency diseases; their diagnosis and treatment, 441

Dementia Paralytica, juvenile, serologic paradox in; report of case, *595
spinal fluid reaction in general paresis as modified by combination of therapeutic malaria and tryparsamide, 636

Depigmentation: See Pigmentation

Dermatitis: See also Acrodermatitis; Neurodermatitis; etc.
Acneform: See Acne
and stomatitis from mercury of amalgam fillings, *349
arsenical lichen planus-like dermatitis, 968
arsenical, produced in treatment of trichomonas vaginitis; report of 5 cases, *198
Arsphenamine: See Arsphenamines
Atopic: See Neurodermatitis
Atrophicans: See Atrophy
caused by Mexican rubber plant, *780
citrus fruit dermatoses, *225
cosmetic irritants, *906
Eczematous: See Eczema
exfoliativa in case of untreated psoriasis, 121
exfoliativa; poisoning from cutaneous application of iodine, 637
exfoliative (gold?) and vitiligo, 264
experimental, pepsin of serum in, 643
factitia or prurigo, 126
Gangraenosa Infantum: See Skin, gangrene
Herpetiformis: See Dermatitis multiformis
intertriginous (moniliasis?), 990
lichenoid arsenical dermatitis, 472

Dermatitis—Continued
linear eruption resembling lichen planus in syphilitic patient with arsenical dermatitis, 659
linear, from contact with jellyfish, 106
Medicamentosa: See also under Drugs; and under names of drugs, as Acetarsone; Arsenic and Arsenic Compounds; Arsphenamines; Bismuth and Bismuth Compounds; Gold and Gold Compounds; Phenolphthalein; Silver; Tryparsamide; etc.
medicamentosa due to injections of liver, 462
multiformis; dermatitis herpetiformis, 488, 672, 673, 985
multiformis; dermatitis herpetiformis and cancer of pancreas, 974
multiformis; dermatitis herpetiformis; arsenical keratosis, 264
multiformis; hypercholesteremic splenomegaly with xanthomatosis and dermatitis herpetiformis, 145
multiformis; report on case of dermatitis herpetiformis, 803
Occupational: See also under Industrial Diseases; and under names of various diseases and substances
occupational; industrial dermatitis and Workmen's Compensation Act, 640
occurrence in humans of contagious pustular dermatitis of sheep ("orf"), 788
pigmented purpuric lichenoid dermatitis (Gougerot), 506
postarsphenamine exfoliative dermatitis; etiology, complications and treatment, 80
Roentgen Ray: See under Roentgen Rays
rosacea, recurrent dermatitis of face and hands, light sensitivity or pellagrinous dermatitis, 994
scrofuloderma or secondary radiodermatitis, 452
Seborrheic: See Seborrhea
Solar: See Light, toxicity
toxic, or pityriasis rosea, 126
Venenata: See also under Dyes; Gold and Gold Compounds; Leather; Petrolatum; Petroleum Products; etc.
venenata; contact dermatitis from "horn-rimmed" spectacles; report of case, *746
venenata, due to shoe leather and to shoe polish, *434
venenata; lipstick dermatitis with report of case due to eosin, 641
venenata or drug eruption, 118
Dermatofibrosarcoma protuberans (E. Hoffmann), 963
Dermatologic societies, directory of, 325, 675, 1017
Dermatomycosis: See Mycosis, cutaneous
Dermatomyositis progressiva, poikiloderma with calcinosis universalis due to, 307
Dermatophytosis: See Mycosis, cutaneous; Ringworm
Dermatoses: See Dermatitis; Eczema; Skin, diseases; etc.
Dermolipodystrophy, case of, 642
Diabetes Mellitus: See also Xanthoma diabeticorum
case of xanthoma diabeticorum associated with diabetes mellitus and acromegaly, 782
necrobiosis lipoidica diabeticorum, 268, 311
xanthoma tuberosum associated with trauma and mild diabetes mellitus, 81
Diathermy: See under names of various diseases
Dictamnus Albus: See under Plants
Dietrich, C.: Angiokeratoma, 157
Granulosis rubra nasi, 155
Nevus (abortive attempt at polydactylism?), 156
Directory of dermatologic societies, 325, 675, 1017
Dixon, H. A.: Melanotic sarcoma with extreme melanosis; report of case, *574
Doty, C. A.: Bourneville-Pringle's disease in patient whose right eye was enucleated because of intraocular tumor, 813
Bowen's dermatosis and multiple basal cell epithelioma, 807
Case for diagnosis, 805
Disseminate tuberculosis of face (mixed type), 810
Granulomatous inflammation of palate, case for diagnosis, 804
Lymphedema of eyelids; recurrent erysipelas; congenital syphilis, 814
Lymphedema of upper lip, 814
Naevus anaemicus, 813
Paget-like disease of circumanal skin and carcinoma of rectum, 811
Pityriasis rubra pilaris, 809
Psoriasis guttata of skin and oral mucosa, 808
Psoriasis of oral mucosa; pigmented psoriasis, 808
Seronegative tertiary syphilis or lupus vulgaris, 806
Syringocystadenoma multiplex, 809
Tinea amiantacea, 807
Drant, P.: Peripheral neuritis; trophic ulcer; calcification of ears, 987
Driver, J. B.: Giant cell tumor of epulis type, case for diagnosis, 794
Drugs, Eruptions: See also under names of drugs, as Acetarsone; Arsenic and Arsenic Compounds; Arsphenamines; Bismuth and Bismuth Compounds; Gold and Gold Compounds; Phenolphthalein; Silver; Tryparsamide; etc.
eruptions, or dermatitis venenata, 118
fixed eruption, case for diagnosis, 289
Ducrey Vaccine: See Chancroid, diagnosis
Duhring's Disease: See Dermatitis multiformis
Durand-Nicolas-Favre's Disease: See Lymphogranuloma Venereum
Dyes: See also Stains and Staining
contact eczema from dyed clothing, 440
dermatitis due to shoe leather and to shoe polish, *434
results of experimental investigation on cutaneous storage of, 445
subsurface mycelium and dyes; their significance in mycologic studies, *235
Dysentery, Amebic: See Amebiasis
Dystrophy, cutaneous, and obesity of adrenal origin, 256

Ear, calcification, peripheral neuritis and trophic ulcer, 987
external; perichondritis nodularis chronica or epithelioma, 87
Ebert, M. H.: Discoid lupus erythematosus involving palpebral conjunctiva, 287
Fixed eruption, case for diagnosis, 289
Lichen nitidus, case for diagnosis, 834
Lupus erythematosus disseminatus subacutus with phlyctenular keratoconjunctivitis, 831
Pemphigus, 273
Submucous hemorrhage of uvula with necrosis, following ingestion of acetylsalicylic acid, 288
Syphiloderm (late) resembling erythema annulare centrifugum, 279
Syringofibroangioma (originally presented as traumatic fibroangioma with localized hyperhidrosis), 833
Ulerythema acneiforme, 292
Ectodermal defect, congenital, hereditary ectodermal dysplasia of anhidrotic type, *893
Eczema, 112
and serum lipase, 444
and phagocytosis of leukocytes; influence of serum of subjects with dermatitis on phagocytosis of leukocytes in normal rabbits, 84
arachidonic and linolic acid of serum in normal and eczematous human subjects, 254

Eczema—Continued
atopic, and asthma with bilateral cataract, 130
contact and environmental allergens as cause in infants and in children, *511
contact eczema from dyed clothing, 440
cutaneous, threshold of tolerance in, 257
dietetic treatment in infants and in children, 634
diffusum resembling mycosis fungoides, 652
experimental investigation of toxic substances in skin affected with dermatitis, 790
experimental investigation of toxic substances in skin affected with dermatitis; influence of extract of skin affected with dermatitis on histologic picture of liver, kidney and testis, 790
high fat feeding of eczematous infants, 960
relation between assimilation of water and dermatoses on basis of tests of water excretion in psoriasis, eczema and few other dermatoses (diuretic index), 258
results of treatment in infants with BCG, 442
Seborrheic: See Seborrhea

Edema: See Elephantiasis; and under names of organs, as Vulva; etc.

Electrocoagulation: See under names of various diseases

Electrolytes: See under Blood; Urine

Electropyrexia: See under Syphilis

Elephantiasis: See also Lymphogranuloma Venereum
lymphedema of eyelids, recurrent erysipelas and congenital syphilis, 814
lymphedema of upper lip, 814

Ellis, F. A.: Is lichen nitidus a variety of lichen planus? *569

Emotions, psychologic aspects of skin diseases, 959

Endocarditis, staphylococcic, superimposed on syphilitic aortic endocarditis, 785

Endothelioma, nevoxanthoendothelioma, case for diagnosis, 268

Eosin, lipstick dermatitis with report of case due to, 641

Epidermolysis bullosa, 319, 465
bullosa hereditaria, 472, 826

Epilepsy, adenoma sebaceum in epileptic moron, 147
syphilitic, 635

Epithelioma, Bowen's dermatosis and multiple basal cell epithelioma, 807
Bowen's disease with metastases (epithelioma of Bowen), *191
chancre of lip resembling epithelioma, 817
disseminate multiple epitheliomatosis of skin with possible prickle cell changes in 1 of lesions, 91
large, of cheek; report of case, *902
multiple, 977
multiple basal cell epithelioma, part of 1 lesion changing to fungating tumor, 824
multiple basal cell epitheliomatosis, 276
multiple benign cystic epithelioma or adenoma sebaceum in mother and daughter, 2 cases for diagnosis, 986
of lip or ulcerative tertiary syphilis [?] on right buccal mucosa with lingual and buccal leukoplakia, 670
of tongue, case for diagnosis, 290
or perichondritis nodularis chronica, 87
or tuberculosis cutis, 981
squamous cell, developing on sebaceous cyst, 791
squamous cell, in psoriatic patches, *241, 780
squamous cell, of buttock, 101
squamous cell, of left fourth finger; case report, 634

Epstein, E.: Hyperkeratotic papular eruption of forehead and cheeks, case for diagnosis, 998
Lupus pernio, 502
Prognostic significance of cutaneous lesions in coccidioidal granuloma, *752

Epstein, N. N.: Atrophia pilorum, 136
Lichen nitidus, 495
Parapsoriasis, 496

Epulis: See under Tumors

Eruptions: See under Arsphenamines; Drugs, eruptions; Skin, diseases; etc.

Erysipelas, clinical experience in treatment with prontosil, 962
erysipelas-like eruption complicating dermatophytosis, 80
recurrent erysipelas-like manifestations of legs; their relationship to fungous infections of feet, 80
recurrent, lymphedema of eyelids and congenital syphilis, 814

Erysipeloid of Rosenbach, 662

Erythema ab igne, case for diagnosis, 478
annular, and streptococcemia in course of Bouillaud's disease, 442
annulare centrifugum (Darier), case for diagnosis, 111
annulare centrifugum resembling late syphiloderm, 279
induratum, 271
induratum and cervical adenitis, 296
induratum, case for diagnosis, 997
multiforme exsudativum of Hebra, caseinogen as causative factor in etiology of, 788
multiforme exsudativum, treatment with sulfanilamide; report of case, *623
multiforme or pemphigus, 1005
nodosum, 479
nodosum, and tuberculous cervical adenitis, 823
nodosum as evidence of increased allergy to tuberculin; its appearance following tuberculin reactions, 442
nodosum, pathogenesis of, 256
palmare as part of generalized telangiectasis during pregnancy, 836
solare, 2 cases for diagnosis, 1010
symmetric, of soles; "symmetrical lividities of soles of feet" (Pernet), *881

Erythrasma, generalized, 819

Erythrocytes, Sedimentation: See Blood, sedimentation

Erythroderma, with stiffness and induration of deeper tissues, case for diagnosis, 1001

Erythromelalgia, report of case of its association with chronic gout with relief of symptoms for 2 years after intravenous administration of typhoid vaccine, *73

Erythroplasia: See Penis

Erythrose péribuccale pigmentaire de Brocq or pigmentation following treatment with arsphenamine and bismuth, 670

Esophagus, progressive scleroderma associated with stricture of esophagus and rectum; improvement after cervical sympathectomy, 975

Esthiomene: See Lymphogranuloma Venereum

Estrogens, excretion of androgenic and estrogenic substances in urine of children, 784

Extremities, paralysis; flaccid paralysis following treatment of amebic dysentery with acetarsone, 257

Eyelids, lymphedema of, recurrent erysipelas and congenital syphilis, 814
Paget's disease associated with carcinoma, 83

Eyes, Bourneville-Pringle's disease in patient whose right eye was enucleated because of intraocular tumor, 813
ocular pemphigus or essential shrinkage of conjunctiva, 135

Face, blue nevus; "mongolian spots" (sacrum), 483
disseminate tuberculosis of face (mixed type), 810
infections of dangerous areas of, 79

Fat: See also Lipoids
recurrent furunculoid lesions of adipose tissue, case for diagnosis, 153

Favotrichophyton album var. singulare, sycosis parasitica due to, *756

Favre-Nicolas' Disease: See Lymphogranuloma Venereum

Favus: See Tinea favosa

Feces, clinical excretion of bismuth; fecal and total excretion, 439
clinical excretion of bismuth; late excretion of bismuth after cessation of treatment, 440

Feeblemindedness, adenoma sebaceum in epileptic moron, 147
incidence of diseases of skin in feebleminded person, *203

Feer's Disease: See Acrodynia

Feiler, H. B.: Seborrheic eczema, case for diagnosis, 508

Feldman, S.: Dermatitis exfoliativa in case of untreated psoriasis, 121
Macular atrophy (Schwenninger-Buzzi type), 117, 467
Macular atrophy, secondary to syphilis, 504
Moniliasis of skin and mucous membrane of mouth, 124
Pigmentation following treatment with arsphenamine and bismuth or erythrose péribuccale pigmentaire de Brocq, 670
Prurigo or dermatitis factitia, 126

Felsher, I. M.: Calcinosis cutis, 828

Fever, Therapeutic: See under Syphilis

Fibroangioma, syringofibroangioma originally presented as traumatic fibroangioma with localized hyperhidrosis, 833

Fibroma, amyotrophia syphilitica with subcutaneous fibroid nodules, 133
case for diagnosis, 655
lingual, or glossitis rhombica mediana, 161

Fifth Venereal Disease: See Granuloma inguinale

Fingers and Toes: See also Foot; Hand
glomus tumor, case for diagnosis, 108
Nails: See Nails
squamous-cell epithelioma of left fourth finger; case report, 634

Firjal: See Syphilis

Fistula, congenital, of lower lip, 151

Flood, J. M.: Lymphangiectasis associated with naevus flammeus and lymphangioma of scrotum and thigh, 982

Folliculitis decalvans, 137
decalvans et atrophicans (Little), or lichen planus acuminatus et atrophicans (Feldman), 668
decalvans, familial, 150
naris perforans; report of case, *429

Fondé, G. H.: Citrus fruit dermatoses, *225

Food, Allergy: See under Anaphylaxis and Allergy; and under names of various foods, as Milk; etc.

Foot: See also Fingers and Toes; etc.
dermatophytosis of feet; sources and methods of prevention of reinfection, *367
possible cavernous angioma of both feet, 99, 803
symmetric erythema of soles; "symmetrical lividities of soles of feet" (Pernet), *881
syringomyelia with malum perforans in brothers, 142

Fordyce-Fox's Disease: See Fox-Fordyce's disease

Forearm, abnormalities; congenital absence of skin areas, 443

Fox-Fordyce's disease, 140, 469

Fox, H.: Adenoma sebaceum, 100
American leishmaniasis, 975
Chancroidal ulcer of long duration cured with sulfanilamide, 660

Fox, H.—Continued
Darier's disease, 654
Demonstration of moulages, 980
Dermatitis medicamentosa (neoarsphenamine) of lichenoid type, 114
Granuloma inguinale, 979
Leprosy, mixed type, 100
Leukaemia cutis, 659
Linear dermatitis from contact with jellyfish, 106
Mycosis fungoides or lymphoblastoma, 103
Neural leprosy, 979
Phagedenic chancroid, case for diagnosis, 660
Progressive scleroderma associated with stricture of esophagus and rectum; improvement after cervical sympathectomy, 975
Report on case of pyoderma gangraenosum, 980
Severe ichthyosis, 87
Urticaria pigmentosa beginning at age of 7 years, 797

Frambesia, visceral pathology in Haitian treponematosis, 637

Franks, A. G.: Nitritoid reaction following injection of tryparsamide, *949

Fraser, J. F.: Angioma of cheek, 972
Arsenical lichen planus-like dermatitis, 968
Eczema, 112
Incontinentia pigmenti (Bloch-Sulzberger); report of additional case with comment on possible relation to new syndrome of familial and congenital anomalies, *57
Multiple idiopathic hemorrhagic sarcoma (Kaposi), 105
Pyoderma or molluscum contagiosum, 965
Radiodermatitis with ulcers, 798
Spiradenoma, 90
Squamous cell epithelioma of buttock, 101

Freeman, H. E.: Amyotrophia syphilitica with subcutaneous fibroid nodules, 133
Monocytic leukemia cutis, 796

Freeman, K. I.: Alopecia universalis and leukoderma acquisitum centrifugum, 263

Frei Reaction: See Lymphogranuloma Venereum

Friedman, R.: Lupus erythematosus, 148
Xanthelasmatosis, associated with hepatic enlargement of undetermined nature, 261

Fruit, citrus fruit dermatoses, *225

Fungi: See also Actinomycosis; Blastomycosis; Mycosis; Ringworm; Trichophytosis; etc.
effects of roentgen rays on fungi in vitro, *38
mycologic technic for study of anascosporous yeastlike fungi, *526
new method of staining skin and hairs for detection of fungi, 788
production of surface growth of pathogenic fungi on culture mediums; some factors of importance, *32
red pathogenic yeast fungi, 445
subsurface mycelium and dyes; their significance in mycologic studies, *235

Furunculosis, recurrent furunculoid lesions of adipose tissue, case for diagnosis, 153

Gammel, J. A.: Sycosis parasitica due to Favotrichophyton album var. singulare, *756

Ganglionectomy: See Sympathectomy

Gangrene, gangrenous pyoderma accompanied with hemorrhagic colitis, 478
varicella gangrenosa due to Streptococcus pyogenes, 442

Garbe, W.: Multinucleated (giant) cell tumor of gum (epulis), *603

Garner, V. C.: Circumscribed myxedema (postoperative), 992
Glossitis rhombica mediana or lingual fibroma, 161
Kaposi's sarcoma in Negro, 985
Rosacea-like tuberculid of Lewandowsky, case for diagnosis, 264

Gas Plant: See under Plants

Genitals: See also under names of genitals, as Penis; etc.
pemphigus of conjunctivas and of mucous membranes of mouth and genitalia, 133

Gilman, R. L.: Papulonecrotic tuberculid, 986
Telangiectatic lupus erythematosus, 265

Gilmour, A. J.: Fibroma, case for diagnosis, 655

Ginsberg, J. E.: Macular atrophy with hyperpigmentation (superficial scleroderma?), 832
Mucous gland tumors of skin, *52

Glasses, contact dermatitis from "horn-rimmed" spectacles; report of case, *746

Glomus Tumors: See under Tumors

Glossitis: See Tongue, inflammation

Glycerin, influence of glycerol on skin necrosis produced by staphylococcus toxin, 959

Glycerol: See Glycerin

Goiter, atypical myxedema coincident with exophthalmic goiter, 443

Gold and Gold Compounds, Therapy: See under Lupus erythematosus; Syphilis; etc.
vitiligo and exfoliative dermatitis, 264

Goldstein's Disease: See Telangiectasis

Gomes, J. M.: Chromoblastomycosis caused by fungus of genus Hormodendron, *12

Gonadotropic Substances: See Androgens; Pregnancy, urine in

Goodman, H.: Dermatologic symptoms of vitamin deficiencies, *389

Gout, erythromelalgia; report of case of its association with chronic gout with relief of symptoms for 2 years after intravenous administration of typhoid vaccine, *73

Granulocytopenia: See Angina, agranulocytic

Granuloma: See also Lipogranulomatosis
annulare, 110, 280
annulare or sarcoidosis, 128
benign lymphadenoid granuloma, 641
Coccidioidal: See Coccidioides
granulomatous inflammation of palate, case for diagnosis, 804
Inguinale: See also Lymphogranuloma Venereum
inguinale, 826, 979
inguinale, extragenital, *358
inguinale, preliminary report of certain microscopic observations, 783
inguinale; report of case of involvement of upper lip and depigmentation and edema of vulva, *245
inguinale, specific histology of, 957
Paracoccidioidal: See Blastomycosis

Granulosis rubra nasi, 155

Graves, J. M.: Dermatitis herpetiformis, 488
Rhinoscleroma, 494

Greenbaum, S. S.: Lichen planus accentuated by neoarsphenamine therapy; syphilis, 153

Greenblatt, R. B.: Extragenital granuloma inguinale, *358

Groin, pityriasis versicolor involving inguinal region and genitocrural folds, *249

Gross, E. R.: Case for diagnosis, 992
Intertriginous dermatitis (moniliasis?), 990
Lupus erythematosus with exudative retinitis, 993
Recurring herpes simplex, 990
Tertiary syphilis, 157

Gross, P.: Leprosy, case for diagnosis, 461
Parapsoriasis en plaques or mycosis fungoides, 667
Pustular bacterid (Andrews), 664
Unusual eruption suggestive of vitamin B_2 deficiency, cured by injections of liver extract, 450

Guequierre, J. P.: Alopecia universalis and leukoderma acquisitum centrifugum, 263
Dermatitis herpetiformis; arsenical keratosis, 264
Pityriasis rosea associated with oral lesions, 159, 262

Gumma: See also Syphilis, tertiary
of right leg, with secondary infection, 93

Gums, giant cell tumor of epulis type, 794
multinucleated (giant) cell tumor of gum (epulis), *603

Habermann's Disease: See Pityriasis lichenoides et varioliformis acuta

Hair, acquired progressive kinking of scalp hair with changes in its pigmentation, 648
atrophia pilorum, 136
excessive; hirsutism, 260
radiodermatitis following treatment for hypertrichosis, 991
scleroderma and hypertrichosis in child, 473
traumatic alopecia, 443
trichostasis spinulosa, *363

Hall, T. B.: Granuloma inguinale; report of case of involvement of upper lip and depigmentation and edema of vulva, *245

Hallopeau's Disease: See Acrodermatitis

Hand, E. A.: Morphea (unilateral distribution), 305

Hand: See also Fingers and Toes
ringworm of hand and scalp, 270

Hansen, R. F.: Symmetric erythema of soles; "symmetrical lividities of soles of feet" (Pernet), *881

Hansen's Disease: See Leprosy

Hasley, C. K.: Blue nevus or argyria, 302
Bourneville-Pringle's disease in patient whose right eye was enucleated because of intraocular tumor, 813
Bowen's dermatosis and multiple basal cell epithelioma, 807
Case for diagnosis, 805
Disseminate tuberculosis of face (mixed type), 810
Granulomatous inflammation of palate, case for diagnosis, 804
Kaposi's sarcoma, 315
Lymphedema of eyelids; recurrent erysipelas; congenital syphilis, 814
Lymphedema of upper lip, 814
Naevus anaemicus, 813
Paget-like disease of circumanal skin and carcinoma of rectum, 811
Pityriasis rubra pilaris, 809
Psoriasis guttata of skin and oral mucosa, 808
Psoriasis of oral mucosa; pigmented psoriasis, 808
Scleroderma, 306
Seronegative tertiary syphilis or lupus vulgaris, 806
Syringocystadenoma multiplex, 809
Tinea amiantacea, 807

Hasselmann, C. M.: Syphilis among Arabs in near East; bejel and loath in Iraq and Syria; firjal and latta in Palestine; laghout in Lebanon; abou-laghif and jifar in Trans-Jordan, *837

Hazel, O. G.: Urticaria provoked by heat or by psychic stimuli, *679

Heart: See also Endocarditis
syphilis of interventricular septum and ventricular tachycardia, 781

Heat, urticaria provoked by heat or by psychic stimuli, *679

Hedge, H. M.: Erythema induratum, 271
Multiple basal cell epitheliomatosis, 276

Helminthiasis: See Intestines, parasites

Hematoma with acne, case for diagnosis, 89

Hepatomegaly associated with jaundice; xanthomatosis (generalized); tertiary syphilis, 468

Herpes gestationis, 655
simplex, recurring, 990
simplex, treatment with moccasin venom, *599
zoster, 835
zoster, bilateral, *436
zoster, mechanism and its relation to chickenpox, 82

Hill, W. F.: Is lichen nitidus a variety of lichen planus? *569

Hill, W. R.: Morphea, 982
Psoriasis of hands or moniliasis, case for diagnosis, 982

Hirsutism: See Hair, excessive

Hitch, J. M.: Cutaneous manifestations of tularemia, *859
Symmetric erythema of soles; "symmetrical lividities of soles of feet" (Pernet), *881

Hitch, J. M., Jr.: Mouse brain lymphogranuloma venereum antigen; clinical experience at Cleveland City Hospital, *383

Hodgkin's Disease: See Lymphogranuloma

Hollander, E.: Treatment of pruritus ani by tattoo with mercuric sulfide, *337

Hollander, L.: Dermatitis produced by petrolatum; report of case, *49

Holmes, R. H.: Dermatitis and stomatitis from mercury of amalgam fillings, *349

Hopkins, J. G.: Bowen's disease in association with radium-induced atrophy of skin, 88
Urticaria provoked by heat or by psychic stimuli, *679

Hopper, M. E.: Favus involving toe nail; report of case, *856
Trichophytin test; its value as diagnostic aid, *713

Hormones, Gonadotropic: See Pregnancy, urine in

Horn, cutaneous, in Negro, 1007

Hughes, R. P.: Dermatitis caused by Mexican rubber plant, *780

Hutchinson-Boeck Sarcoid: See Sarcoid

Hutner, L.: Incontinentia pigmenti (Bloch-Sulzberger); report of additional case with comment on possible relation to new syndrome of familial and congenital anomalies, *57

Hydroa, studies of photosensitization by porphyrins, 640

Hypercholesteremia: See Blood, cholesterol

Hyperhidrosis: See under Sweat Glands

Hyperkeratosis: See Ichthyosis; Keratosis

Hyperpyrexia: See under Syphilis

Hypertrichosis: See under Hair

Hypophysis: See Pituitary Body

Ichthyosis, congenital, with recovery, 960
severe, 87
severe, in Negro, 663

Icterus: See Jaundice

Idiocy: See Feeblemindedness

Incontinentia Pigmenti: See Pigmentation, cutaneous

Industrial Diseases, cosmetic irritants, *906
industrial dermatitis and Workmen's Compensation Act, 640
study of fatal cases of cancer of scrotum from 1911 to 1935 in relation to occupation with reference to chimney sweeping and cotton mule spinning, 781
torch oil dermatitis; its relation to epidermomycosis ("ringworm"), 785

Industry and Occupations, studies in cardiovascular syphilis; effect of occupation on incidence and type of syphilitic aortitis, 782

Infectious Diseases: See Typhoid; etc.

Inflammation, changes in blood vessels (capillary fragility) with inflammation, 786
chronic, in tattoo mark, 481

Ingels, A. E.: Folliculitis decalvans, 137
Hereditary hemorrhagic telangiectasia, 997
Leprosy, 999
Panniculitis, case for diagnosis, 493

Inguinal Region: See Groin

Instruments: See Apparatus

Intestines, parasites; report on helminthiasis and dermatoses, 642

Iodine and Iodine Compounds, acneform iododerma (iodized salt), 966
pemphigus or iododerma, 821
poisoning from cutaneous application of iodine, 637

Iodobismitol: See Bismuth and Bismuth Compounds

Iododerma: See under Iodine and Iodine Compounds

Ivy Poisoning: See under Rhus

Jacobson, H. P.: Coccidioidal granuloma, 484
Effects of roentgen rays on fungi in vitro, *38
Extensive psoriasis, 485

Jacoby, H.: Bowen's disease with metastases (epithelioma of Bowen), *191

Jamieson, R. C.: Case for diagnosis, 298, 302
Necrobiosis lipoidica diabeticorum, 311
Sarcoid with lesions on arms resembling papulonecrotic tuberculid, 297

Jaundice, postarsphenamine, 636
xanthomatosis (generalized); hepatomegaly associated with jaundice; tertiary syphilis, 468

Jellyfish, linear dermatitis from contact with jellyfish, 106

Jifar: See Syphilis

Johnson, L. V.: Ocular pemphigus or essential shrinkage of conjunctiva, 135
Rosacea keratitis, 135

Journals: See Periodicals

Kahn, B. L.: Mycosis fungoides; syphilis, 995

Kala-Azar: See Leishmaniasis

Kampf, M. B.: Dermatitis herpetiformis, 673
Macular atrophy (Schwenninger and Buzzi type), 116

Kaposi's Disease: See Xeroderma pigmentosum
Sarcoma: See Sarcoma
Varicelliform Eruption: See Pyoderma

Katz, S.: Lichen planus accentuated by neoarsphenamine therapy; syphilis, 153

Kaufman, S. R.: Familial folliculitis decalvans, 150
Hypercholesteremic splenomegaly with xanthomatosis and dermatitis herpetiformis, 145

Keil, H.: Parapsoriasis en plaques disséminées and incipient mycosis fungoides; supplementary data on their relationship, *545

Kelley, E. F. T.: Epidermolysis bullosa hereditaria, 826
Lupus erythematosus or pseudopelade of Brocq, 508

Kelly, R. J.: Leukoderma centrifugum acquisitum of Sutton, 455
Treatment of herpes simplex with moccasin venom, *599

Keloid: See also Cicatrix
case for diagnosis, 644
multiple hypertrophic scars in child 4 years old, 502

Kendrick, F. J.: Nevoxanthoendothelioma, case for diagnosis, 268
Physical allergy in sisters; sensitization to sunlight, 291
Scleroderma-like lesions on legs (poikiloderma?), 286

Keratitis: See also Keratoconjunctivitis
interstitial; poor result despite continuous and intensive treatment, 990
rosacea keratitis, 135

Keratoconjunctivitis, phlyctenular, with lupus erythematosus disseminatus subacutus, 831
Keratosis: See also Ichthyosis
arsenical; dermatitis herpetiformis, 264
case of inherited ainhum-like hyperkeratosis, *26
follicularis, 498
follicularis; Darier's disease, 147, 654, 824
follicularis; successful treatment of Darier's disease, 258
hyperkeratotic papular eruption of forehead and cheeks, case for diagnosis, 998
palmaris et plantaris, case for diagnosis, 149
pilaris, possible prelude to pityriasis rubra pilaris, 154
seborrheic (carotenoid pigmentation?), 123
Kesten, B. M.: Arsenical dermatitis produced in treatment of trichomonas vaginitis; report of 5 cases, *198
Urticaria provoked by heat or by psychic stimuli, *679
Ketron, L. W.: Mycosis fungoides, case for diagnosis, 143
Kidneys, experimental investigation of toxic substances in skin affected with dermatitis; influence of extract of skin affected with dermatitis on histologic picture of liver, kidney and testis, 790
Kilroy, J. F.: Cervical adenitis and erythema induratum, 296
Lichen scrofulosorum, 297
Rosacea-like tuberculid of Lewandowsky? 297
Klauder, J. V.: Acne urticata polycythaemica, 145
Argyria, lupus erythematosus of scalp and essential shriveling of conjunctiva (ocular pemphigus) with involvement of all mucous membranes, 151
Case for diagnosis, 992
Essential shriveling of conjunctiva (ocular pemphigus); pemphigus of mucous membranes, 988
Interstitial keratitis; poor result despite continuous and intensive treatment, 990
Lupus erythematosus with exudative retinitis, 993
Sarcoma in dog treated with roentgen radiation, 160
Tuberculosis (distinctive type) in Negress, 148
Kline Test: See Syphilis
Klinge-Aschoff Nodule: See Rheumatic Fever
Knerler, C. W.: Mycosis fungoides in mother and in daughter; further report, *939
Knowles, F. C.: Familial folliculitis decalvans, 150
Susceptibility of allergic and nonallergic persons to rhus toxicodendron, *773
Syringomyelia with malum perforans in brothers, 142
Koilonychia: See Nails, diseases
Krajian, A. A.: Reliable method of staining Spirochaeta pallida in smears, *427
Kulchar, G. V.: Early mycosis fungoides, 497
Treatment-resistant primary syphilis, 1000
Kuznitzky, E.: Bowen's disease with metastases (epithelioma of Bowen), *191

Labia Majora: See Vulva
Laboratories, assembly of laboratory directors and serologists, 77
Laënnec's Disease: See under Liver
Laghout: See Syphilis
LaRocco, C. G.: Tuberculosis of skin or capillaritis, 1009
Latta: See Syphilis
Laymon, C.: Naevus anaemicus, 648
Leather, dermatitis due to shoe leather and to shoe polish, *434
Leifer, W.: Epidermolysis bullosa, 465
Sarcoidosis (Besnier-Boeck-Schaumann syndrome) involving skin, lymph nodes, bones and tendon sheaths, 457
Leiomyoma cutis, 283, 324
Leishmaniasis, American, 975
Leprosy, 825, 999
case for diagnosis, 461
mixed type, 100
neural, 489, 979
or sarcoid, 820
pemphigus leprosus, 446
Lerner, C.: Recklinghausen's disease with nevi, deformity of bone and tumefaction of soft tissue, 672
Leukemia, classification and terminology of leukemia and allied disorders, 783
cutis, 659
dermatologic manifestations of lymphoblastoma-leukemia group, 783
monocytic; cutaneous manifestations of Naegeli and Schilling types; hemocytologic differentiation, 80
monocytic leukemia cutis, 796
monocytic; report of 6 cases and review of 127 cases, 637
myelogenous, cutaneous manifestations of, 641
purpuric leukemid in case of chronic myelogenous leukemia, 463
Leukemid: See Leukemia
Leukoderma: See Vitiligo
Leukonychia: See under Nails
Leukoplakia: See under Mouth
Lever, W. F.: Relapsing febrile nodular nonsuppurative panniculitis (Weber-Christian disease); report of 2 cases, *415
Levin, E. A.: Atrophia pilorum, 136
Case for diagnosis, 502
Lichen nitidus, 495
Xanthelasma, 495
Lewis, G. M.: Dermatophytosis (immediate wheal reaction to trichophytin), 658
Dermatophytosis; onychomycosis, 109
Dermatophytosis; tinea glabrosa, 109
Dermatophytosis (Trichophyton purpureum), 109
Erysipeloid of Rosenbach, 662
Favus involving toe nail; report of case, *856
Trichophytin test; its value as diagnostic aid, *713
Lichen, lichenoid arsenical dermatitis, 472
nitidus, 495, 979
nitidus, case for diagnosis, 834
nitidus, is it a variety of lichen planus? *569
pigmented purpuric lichenoid dermatitis (Gougerot), 506
planus accentuated by neoarsphenamine therapy; syphilis, 153
planus acuminatus et atrophicans (Feldman) or folliculitis decalvans et atrophicans (Little), 668
planus and secondary syphilis, 470, 509
planus atrophicus et sclerosus, 266
planus, is lichen nitidus a variety of, *569
planus; leukoderma acquisitum centrifugum in association with lichen planus, *200
planus; linear eruption resembling lichen planus in syphilitic patient with arsenical dermatitis, 659
planus of lips, *401
planus or lichen ruber moniliformis, 479
planus or lupus erythematosus, 111
planus, zosteriform, *615
ruber moniliformis or lichen planus, 479
ruber moniliformis; report of observations at necropsy, *251
scrofulosorum, 297
scrofulosorum and sarcoid, 91
scrofulosorum, sarcoid of Boeck and papulonecrotic tuberculid, 447
scrofulosorum; tuberculosis cutis (scrofuloderma, sarcoid and lichen scrofulosorum), 272
Urticatus: See Urticaria papulosa

Light: See also Ultraviolet Rays; etc.
physical allergy in sisters; sensitization to sunlight, 291
pityriasis rosea sparing tanned areas of skin (bathing trunk distribution), *75
significance of porphyrin content of urine in dermatoses associated with sensitivity to light, *727
studies of photosensitization by porphyrins, 640
toxicity; dermatitis caused by Dictamnus albus (gas plant), 440
toxicity; dermatitis from sulfanilamide, 639
toxicity; erythema solare; 2 cases for diagnosis, 1010
toxicity; rosacea-like tuberculid of Lewandowsky (following sunburn); xanthelasma, 455
toxicity, rosacea, recurrent dermatitis of face and hands or pellagrinous dermatitis, 994
toxicity; skin eruptions in patients receiving sulfanilamide, 638
toxicity; sulfanilamide; photosensitizing agent of skin, 784

Lingua: See Tongue

Lipase in Blood: See Blood, lipase

Lipids: See Lipoids

Lipogranulomatosis, lipophagic granuloma and sclerema neonatorum, 639

Lipoids: See also Fat
case clinically resembling morphea with tuberculous background and indeterminate histology suggestive of necrobiosis lipoidica, 82
necrobiosis lipoidica diabeticorum, 268, 311
necrobiosis without diabetes, 311

Lips, chancre of lip resembling epithelioma, 817
cheilitis (lipstick?), 118
congenital fistulas of lower lip, 151
epithelioma of lip or ulcerative tertiary syphilis on right buccal mucosa with lingual and buccal leukoplakia, 670
granuloma inguinale; report of case of involvement of upper lip and depigmentation and edema of vulva, *245
lichen planus of, *401
lupus erythematosus of, 265
lymphedema of upper lip, 814
xeroderma pigmentosum with carcinoma of lower lip in 2 brothers, aged 16 and 13 years, 78

Lipstick, cheilitis due to, 118
lipstick dermatitis with report of case due to eosin, 641

Livedo reticularis in 2 sisters, 801

Liver, causative factors in production of Laënnec's cirrhosis with reference to syphilis, 782
dermatitis medicamentosa due to injections of, 462
electrolytes of blood and urine of dogs with acute hepatic injury produced by arsphenamine, 635
experimental investigation of toxic substances in skin affected with dermatitis; influence of extract of skin affected with dermatitis on histologic picture of liver, kidney and testis, 790
extensive xanthoma tuberosum in childhood due to infectious cirrhosis of liver, 253
influence of arsphenamine and syphilis on function of reticuloendothelial system and liver; influence of arsphenamine on function of liver, 85
unusual eruption suggestive of vitamin B_2 deficiency, cured by injections of liver extract, 450
xanthelasmatosis associated with hepatic enlargement of undetermined nature, 261

Loath: See Syphilis

Lord, L. W.: Dermatitis due to shoe leather and to shoe polish, *434
Hereditary ectodermal dysplasia of anhydrotic type (congenital ectodermal defect), *893

Love, W. R.: Mouse brain lymphogranuloma venereum antigen; clinical experience at Cleveland City Hospital, *383

Lowenfish, F. P.: Chancroid (chancre?), 453
Moniliasis, 454

Ludy, J. B.: Congenital fistulas of lower lip, 151
Peripheral neuritis; trophic ulcer; calcification of ears, 987
Pseudoxanthoma elasticum, 150

Lunsford, C. J.: Fixed eruption following injections of neoarsphenamine, 499
Multiple idiopathic hemorrhagic sarcoma, case for diagnosis, 1003
Naevus unilateralis or verruca plana juvenilis, 996
Parapsoriasis, 496

Lupus: See also Tuberculosis
erythematosus, 129, 148, 319, 480, 503, 510
erythematosus, acute, 320
erythematosus, buccal and labial, or pemphigus, 663
erythematosus, case for diagnosis, 967
erythematosus, discoid, involving palpebral conjunctiva, 287
erythematosus, discoid, undergoing dissemination, 661
erythematosus discoides with spread of lesions after ultraviolet irradiation, 114
erythematosus, disseminated superficial, case for diagnosis, 127
erythematosus, disseminated, treated with sodium gold thiosulfate, 973
erythematosus disseminatus, 295
erythematosus disseminatus subacutus with phlyctenular keratoconjunctivitis, 831
erythematosus, fulminating acute, cured by sulfanilamide, *621
erythematosus of conjunctiva, 671
erythematosus of lips, 265
erythematosus of scalp, argyria and essential shriveling of conjunctiva (ocular pemphigus) with involvement of all mucous membranes, 151
erythematosus of scalp simulating burn with acid, 971
erythematosus or lichen planus, 111
erythematosus or pseudopelade of Brocq, 508
erythematosus; relation between "systemic" lupus erythematosus and peculiar form of thrombocytopenic purpura, 82
erythematosus; report on case of possible lupus erythematosus, 803
erythematosus, scleroderma or Raynaud's disease, 492
erythematosus, telangiectatic, 265
erythematosus treated by general radiologist, 114
erythematosus treated with bismuth preparation, 120
erythematosus with exudative retinitis, 993
miliaris disseminatus faciei, 979
pernio, 502
tumidus; disseminated hematogenous tuberculosis of lupus tumidus type, 292
vulgaris, 284, 791, 818
vulgaris; determination of ascorbic acid in urine of patients with lupus vulgaris by methylene blue method, 258
vulgaris, hypertrophic, 644
vulgaris or seronegative tertiary syphilis, 806

Lymph Nodes: See also Lymphogranuloma; etc.
as source of neutralizing principle for vaccinia, 81
cervical adenitis and erythema induratum, 296

Lymph Nodes—Continued
sarcoidosis (Besnier-Boeck-Schaumann syndrome) involving skin, lymph nodes, bones and tendon sheaths, 457
tuberculous cervical adenitis and erythema nodosum, 823

Lymphadenitis: See under Lymph Nodes

Lymphangiectasis associated with naevus flammeus and lymphangioma of scrotum and thigh, 982

Lymphangioma, lymphangiectasis associated with naevus flammeus and lymphangioma of scrotum and thigh, 982

Lymphedema: See Elephantiasis

Lymphoblastoma: See also Lymphogranuloma
case for diagnosis, 805
dermatologic manifestations of lymphoblastoma-leukemia group, 783
or mycosis fungoides, 103

Lymphocytoma, benign lymphadenoid granuloma, 641

Lymphogranuloma: See also Granuloma
Hodgkin's disease with generalized pruritus, 832
Inguinale: See Lymphogranuloma Venereum

Lymphograuloma Venereum, 158, 262, 477
chancroid and syphilis, 130
chancroid, cured with sulfanilamide, and syphilis, 476
clinical and histologic studies on so-called esthiomene, 445
erythrocyte sedimentation test, 963
esthiomene, 85
evaluation of Frei test with mouse brain antigen; comparison with human antigen, *930
mouse brain antigen; clinical experience at Cleveland City Hospital, *383
relation between time of appearance of allergy (Frei reaction) and changes in blood and influence of intravenous injection of Frei antigen on blood, 963
stenosing proctitis and Nicolas-Favre's disease, 642
treatment with sulfanilamide, *705
with extension to hip, 133

McFarland, A. R.: Significance of porphyrin content of urine in dermatoses associated with sensitivity to light, *727

Machacek, G. F.: Rosacea-like tuberculid of Lewandowsky (following sunburn); xanthelasma, 455
Sarcoid of Boeck (generalized), 448
Sarcoid of Boeck, lichen scrofulosorum and papulonecrotic tuberculid, 447

MacKee, G. M.: Trichophytin test; its value as diagnostic aid, *713

Madden, J. F.: Chronic inflammation in tattoo mark, 481
Erythema ab igne, case for diagnosis, 478
Erythema nodosum, 479
Gangrenous pyoderma accompanied with hemorrhagic colitis, 478
Lichen ruber moniliformis or lichen planus, 479
Lupus erythematosus, 480

Malingering, unusual cutaneous manifestations in psychopathic patient, 505

Malum Perforans: See under Foot

Mapharsen: See under Syphilis

Margard, G. A.: Mouse brain lymphogranuloma venereum antigen; clinical experience at Cleveland City Hospital, *383

Markel, J.: Erythromelalgia; report of case of its association with chronic gout with relief of symptoms for 2 years after intravenous administration of typhoid vaccine, *73

Markowitz, M.: Striae hypertrophicae symmetricae juvenilis, 261

Masculinization: See Virilism

Measles, visceral pathology in; clinicopathologic study of 100 fatal cases, 79

Mecholyl: See Choline and Choline Derivatives

Medicine, naval; skin irritation and cancer in U. S. Navy, 635

Melanin: See also Addison's Disease; Pigmentation
pigmentation; melanotic sarcoma with extreme melanosis; report of case, *574
pigmentation; postinflammatory melanosis, 274

Melanoma, 288
nonpigmented, 656

Melanosis: See Melanin, pigmentation

Memmesheimer, A.: Sudoriparous glands; apocrine glands, *373

Menagh, F. R.: Sporotrichosis, 313

Mendelsohn, H. V.: Toxic dermatitis or pityriasis rosea, 126

Mercury, dermatitis and stomatitis from mercury of amalgam fillings, *349

Metasyphilis: See Syphilis, congenital

Methylene Blue: See Methylthionine Chloride

Methylthionine Chloride, determination of ascorbic acid in urine of patients with lupus vulgaris by methylene blue method, 258

Michelson, H. E.: Acrodermatitis chronica atrophicans, 650

Milk, allergy; caseinogen as causative factor in etiology of erythema multiforme exudativum of Hebra, 788
high fat feeding of eczematous infants, 960

Miller, H. E.: Coccidioidal granuloma, 499

Miller, K. F.: Kline flocculation test; its significance and application in obstetric service of Queens General Hospital, *918

Miller, J. L.: Granuloma inguinale, 826

Miller, T. H.: Case for diagnosis, 317
Tuberculosis cutis, 296

Miskjian, H. G.: Case for diagnosis, 795

Mitchell, J. H.: Bromoderma, 278
Epithelioma of tongue, case for diagnosis, 290
Melanoma, 288

Molds: See Fungi

Moles: See Nevi

Molluscum contagiosum or pyoderma, 965

Mongolian Spot: See Pigmentation, cutaneous

Moniliasis, 454
generalized, and moniliids, 124
intertriginous dermatitis (moniliasis?), 990
of skin and mucous membrane of mouth, 124
or psoriasis of hands, 982

Moniliids and generalized moniliasis, 124

Monocytes: See Leukemia, monocytic

Montgomery, D. W.: Lichen planus of lips, *401

Montgomery, H.: Value and limitations of biopsy in dermatology, *329

Montgomery, O. F.: Keratosis follicularis, 498

Montgomery, R. M.: Favus involving toe nail; report of case, *856

Moore, J. E.: Tabes dorsalis; cooperative clinical studies in treatment of syphilis, *692

Moore, M.: Blastomycosis, coccidioidal granuloma and paracoccidioidal granuloma; comparative study of North American, South American and European organisms and clinical types, *163
Pityriasis versicolor involving inguinal region and genitocrural folds, *249

Morons: See Feeblemindedness

Morphea: See Scleroderma

Morrow, H.: Neural leprosy, 489

Moulages, demonstration of, 980
Mouth: See also Angina, Vincent's; Gums; Stomatitis; etc.
epithelioma of lip or ulcerative tertiary syphilis on right buccal mucosa with lingual and buccal leukoplakia, 670
moniliasis of skin and mucous membrane of mouth, 124
pemphigus of conjunctivas and of mucous membranes of mouth and genitalia, 133
pityriasis rosea associated with oral lesions, 159, 262
psoriasis guttata of skin and oral mucosa, 808
psoriasis of oral mucosa; pigmented psoriasis, 808
ulcus vulvae acutum with ulcers in, 643
Mucous Membrane: See also Mouth; etc.
argyria, lupus erythematosus of scalp and essential shriveling of conjunctiva (ocular pemphigus) with involvement of all mucous membranes, 151
essential shriveling of conjunctiva (ocular pemphigus); pemphigus of mucous membranes, 988
investigation on resorption of substances by skin and mucous membranes, 962
mucous cysts of mucous membrane of hard palate, 466
mucous gland tumors of skin, *52
Muscles, scleredema adultorum (Buschke) with involvement of muscles in 11 year old boy, 634
Mycobacterium Leprae: See under Leprosy
Mycosis: See also Actinomycosis; Blastomycosis; Moniliasis; Ringworm; Stomatitis; Tinea; Torula; Trichophytosis; etc.
cutaneous; dermatophytosis (hands, feet and toe nails) due to Trichophyton purpureum, 646
cutaneous; dermatophytosis (immediate wheal reaction to trichophytin), 658
cutaneous; dermatophytosis of feet; sources and methods of prevention of reinfection, *367
cutaneous; dermatophytosis; onychomycosis, 109
cutaneous; dermatophytosis; tinea glabrosa, 109
cutaneous; dermatophytosis (Trichophyton purpureum), 109
cutaneous; treatment of dermatophytosis with vaccines, *925
fungoides, 465
fungoides, case for diagnosis, 124, 143, 285, 793
fungoides, early, 497
fungoides; eczema diffusum resembling mycosis fungoides, 652
fungoides, fate of patients with, 444
fungoides in mother and in daughter; further report, *939
fungoides, incipient, and parapsoriasis en plaques disséminées; supplementary data on their relationship, *545
fungoides or lymphoblastoma, 103
fungoides or parapsoriasis en plaques, 667
fungoides or syphilis, 647
fungoides; parapsoriasis with beginning mycosis fungoides, 656
fungoides; syphilis, 995
Myelosis, Aleukemic: See Leukemia, myelogenous
Myxedema, atypical, coincident with exophthalmic goiter, 443
circumscribed (postoperative), 992

Nachman, A.: Dermatitis gangraenosa infantum, *407
Nails, dermatophytosis; onychomycosis, 109
diseases; koilonychia, 113
favus involving toe nail; report of case, *856
leukonychia striata, 258
psoriasis of, *583
Nails—Continued
rate of growth of finger nails, 961
syphilitic onychia; report of case in which ungual changes helped to establish diagnosis and time of syphilitic infection, *432
Nares: See Nose
Navies: See Medicine, naval
Neck, extragenital granuloma inguinale, *358
Necrobiosis lipoidica; case clinically resembling morphea with tuberculous background and indeterminate histology suggestive of necrobiosis lipoidica, 82
lipoidica diabeticorum, 268, 311
without diabetes, 311
Neoarsphenamine: See Arsphenamines; and under names of various diseases
Neoplasms: See Cancer; Sarcoma; Tumors
Nerves: See also Neuritis
optic; treatment of syphilis with hyperpyrexia with observations on prognosis of optic atrophy, 956
tryparsamide therapy of neurosyphilis and atrophy of optic nerve, 786
Nervous System: See also Brain; Nerves; etc.
neurocutaneous syndrome, 152
Syphilis: See Syphilis
threshold of tolerance in cutaneous eczema, 257
vegetative, in scleroderma, 256
Netherton, E. W.: Acnitis, 1007
Sarcoid, case for diagnosis, 1008
Sporotrichosis (disseminated subcutaneous type), 131
Neuhauser, I.: Calcinosis cutis, 828
Neuritis, peripheral; trophic ulcer; calcification of ears, 987
Neurocutaneous Syndrome: See under Nervous System; Skin
Neurodermatitis disseminata with cataract, 323
Neurofibromatosis, adenoma sebaceum and its role in neurocutaneous syndrome; tuberous sclerosis and its relationship to Recklinghausen's disease, 964
adenoma sebaceum (Pringle type), associated with Recklinghausen's disease, 669
early Recklinghausen's disease, 318
Recklinghausen's disease, 319
Recklinghausen's disease with nevi, deformity of bone and tumefaction of soft tissue, 672
Neuroma, multiple, case for diagnosis, 102
Neurosyphilis: See under Syphilis
Nevi: See also Angioma
abortive attempt at polydactylism? 156
blue (face); "mongolian spots" (sacrum), 483
blue, or argyria, 302
lymphangiectasis associated with naevus flammeus and lymphangioma of scrotum and thigh, 982
naevus anaemicus, 648, 813
naevus unilateralis or verruca plana juvenilis, 996
nevoxanthoendothelioma, case for diagnosis, 268
or atrophic scar, 140
pigmented mole with white halo, case for diagnosis, 965
Recklinghausen's disease with nevi, deformity of bone and tumefaction of soft tissue, 672
Nicolas-Favre's Disease: See Lymphogranuloma Venereum
Niles, H. D.: Albuminuria in association with scabies; review of literature and report of urinalyses in 216 cases, *19
Atypical psoriasis, case for diagnosis, 816
Nitritoid Crises: See Arsenic and Arsenic Compounds

Nodes: See Erythema nodosum
Nose, folliculitis naris perforans; report of case, *429
granulosis rubra nasi, 155
pyogenic ulceration of, case for diagnosis, 106
Novy, F. G., Jr.: Blastomycosis, 500
Erythema induratum, case for diagnosis, 997
Neural leprosy, 489
Nevus or atrophic scar, 140
Pemphigus, 487

Obermayer, M. E.: Erythema palmare as part of generalized telangiectasis during pregnancy, 836
Herpes zoster, 835
Obesity, cutaneous dystrophy and obesity of adrenal origin, 256
OBITUARIES:
Darier, Jean, 625
Whitehouse, Henry Howard, 631
Occupational Diseases: See Industrial Diseases
Occupations: See Industry and Occupations
O'Leary, P. A.: Tabes dorsalis; cooperative clinical studies in treatment of syphilis, *692
Oliver, E. A.: Lupus vulgaris, 284
Nevoxantho endothelioma, case for diagnosis, 268
Pigmentation of skin, case for diagnosis, 274
Ringworm of hand and scalp, 270
Scleroderma-like lesions on legs (poikiloderma?), 286
Onychia: See Nails
Onychomycosis: See Nails
Orf: See Dermatitis
Oriental Sore: See Leishmaniasis
Ormsby, O. S.: Cutis hyperelastica, 828
Leiomyoma cutis, 283
Lichen planus atrophicus et sclerosus, 266
Xanthoma diabeticorum, 267
Xanthoma juvenile, 267
Xanthoma multiplex, 267
Osborne, E. D.: Contact and environmental allergens as cause of eczema in infants and in children, *511
Osler's Disease: See Telangiectasis
Osteitis, Syphilitic: See Bones, syphilis
Osteoma cutis, case for diagnosis, 983

Paget's Disease of Eyelids: See Eyelids
of Skin: See Skin, diseases
Palate, granulomatous inflammation of, case for diagnosis, 804
mucous cysts of mucous membrane of hard palate, 466
Palmer, R. B.: Folliculitis naris perforans; report of case, *429
Pancreas, cancer, and dermatitis herpetiformis, 974
Panniculitis, case for diagnosis, 493
liquefying nodular panniculitis; report of case, *535
relapsing febrile nodular nonsuppurative (Weber-Christian disease); report of 2 cases, *415
Papilloma, acanthosis nigricans or papillomatose réticulée (Gougerot), 666
Paracoccidioides: See Blastomycosis
Paralysis, Flaccid: See Extremities, paralysis
General: See Dementia Paralytica
Parapsoriasis, 496
en plaques, case for diagnosis, 798
en plaques disséminées and incipient mycosis fungoides; supplementary data on their relationship, *545
Parapsoriasis—Continued
en plaques or mycosis fungoides, 667
guttata with leukoderma, 270
lichenoides et varioliformis, case for diagnosis, 815
with beginning mycosis fungoides, 656
Parathyroid, lichen urticatus (papular urticaria); treatment with parathyroid extract; theoretical consideration of etiology, 253
Paresis: See Dementia Paralytica
Pariser, H. P.: Multiple benign cystic epithelioma or adenoma sebaceum in mother and daughter; 2 cases for diagnosis, 986
Parran, T.: Tabes dorsalis; cooperative clinical studies in treatment of syphilis, *692
Patch Test: See Anaphylaxis and Allergy
Peck, S. M.: Dermatitis medicamentosa due to injections of liver, 462
Pigmented purpuric lichenoid dermatitis (Gougerot), 506
Progressive cutaneous vascular disease with hemorrhage by diapedesis, 460
Purpuric leukemid in case of chronic myelogenous leukemia, 463
Pellagra with unusual involvement of skin, tongue and eyes, 84
Pemphigus, 273, 487, 976
argyria, lupus erythematosus of scalp and essential shriveling of conjunctiva (ocular pemphigus) with involvement of all mucous membranes, 151
essential shriveling of conjunctiva (ocular pemphigus); pemphigus of mucous membranes, 988
etiology of, 83
foliaceus, 825
juvenile; effects of germanin in 3 cases, *555
Leprosus: See under Leprosy
ocular, or essential shrinkage of conjunctiva, 135
of conjunctivas and of mucous membranes of mouth and genitalia, 133
or buccal and labial lupus erythematosus, 663
or erythema multiforme, 1005
or iododerma, 821
vulgaris, 486
vulgaris, contribution to virus origin of, 960
vulgaris, report on case of probable pemphigus vulgaris, 803
Penis, erythroplasia of Queyrat, case for diagnosis, 802
induratio penis plastica, 84
malignant tumor of, 961
Periarteritis nodosa mutilans; report of case, 962
tuberculous, and tuberculosis (nodes, bones and epididymis), 651
Perichondritis: See Ear, external
Periodicals, jubilee number of British Journal of Dermatology, *952
Personality, psychological factors in asthma-prurigo, 959
Perspiration: See Sweat Glands
Petrolatum, dermatitis produced by; report of case, *49
Petroleum Products, torch oil dermatitis; its relation to epidermomycosis ("ringworm"), 785
Phagocytes and Phagocytosis, eczema and phagocytosis of leukocytes; influence of serum of subjects with dermatitis on phagocytosis of leukocytes in normal rabbits, 84
Phalanges: See Fingers and Toes
Phenolphthalein, eruption due to, case for diagnosis, 316
fixed eruption, 999
fixed eruption in patient sensitive to arsphenamine and phenolphthalein in different areas, 474

Photosensitization: See under Light

Pigmentation: See also Addison's Disease; Carotene; Melanin, pigmentation; Nevi; Xeroderma pigmentosum; etc.
cutaneous; Addison's disease or chloasma, 289
cutaneous; blue nevus (face); "mongolian spots" (sacrum), 483
cutaneous; incontinentia pigmenti (Bloch-Sulzberger); report of additional case with comment on possible relation to new syndrome of familial and congenital anomalies, *57
discoloration of cheeks and neck, case for diagnosis, 115
granuloma inguinale; report of case of involvement of upper lip and depigmentation and edema of vulva, *245
macular atrophy with hyperpigmentation (superficial scleroderma?), 832
of skin, case for diagnosis, 274

Pillsbury, D. M.: Dermatitis herpetiformis, 985
Keratosis palmaris et plantaris, case for diagnosis, 149
Neurocutaneous syndrome, 152
Recurrent furunculoid lesions of adipose tissue, case for diagnosis, 153
Rosacea, recurrent dermatitis of face and hands, light sensitivity or pellagrinous dermatitis, 994

Pines, C.: Epithelioma of lip or ulcerative tertiary syphilis on right buccal mucosa with lingual and buccal leukoplakia, 670

Pinkus, H.: Bourneville-Pringle's disease, 314
Bourneville-Pringle's disease in patient whose right eye was enucleated because of intraocular tumor, 813
Bowen's dermatosis and multiple basal cell epithelioma, 807
Case for diagnosis, 805
Disseminate tuberculosis of face (mixed type), 810
Disseminated hematogenous tuberculosis of lupus tumidus type, 292
Granulomatous inflammation of palate, case for diagnosis, 804
Grouped nodular tuberculids (Jadassohn), 293
Lymphedema of eyelids; recurrent erysipelas; congenital syphilis, 814
Lymphedema of upper lip, 814
Naevus anaemicus, 813
Paget-like disease of circumanal skin and carcinoma of rectum, 811
Pityriasis rubra pilaris, 809
Poikiloderma with calcinosis universalis due to dermatomyositis progressiva, 307
Psoriasis guttata of skin and oral mucosa, 808
Psoriasis of oral mucosa; pigmented psoriasis, 808
Seronegative tertiary syphilis or lupus vulgaris, 806
Syringocystadenoma multiplex, 809
Tinea amiantacea, 807

Pinta, White: See Vitiligo

Pituitary Body, Cushing's syndrome (basophilic adenoma of pituitary gland), 490
Cushing's syndrome (early), 491

Pityriasis lichenoides et varioliformis acuta, 979
rosea associated with oral lesions, 159, 262
rosea or toxic dermatitis, 126
rosea sparing tanned areas of skin (bathing trunk distribution), *75
rosea, treatment with eosin, 789
rosea with vesicles, including face, 466
rotunda Matsuura (pityriasis circinata toyama), case in Manchurian, 963
rubra pilaris, 809
rubra pilaris, keratosis pilaris possible prelude to, 154
rubra pilaris or psoriasis, 92
Versicolor: See Tinea versicolor

Plants, dermatitis caused by Dictamnus albus (gas plant), 440
dermatitis caused by Mexican rubber plant, *780

Poikiloderma, case for diagnosis; latent syphilis, 978
or scleroderma, 140
scleroderma-like lesions on legs, 286
with calcinosis universalis due to dermatomyositis progressiva, 307

Poison Ivy: See under Rhus

Polycythemia; acne urticata polycythaemica, 145

Polydactylia, nevus (abortive attempt at polydactylism?), 156

Porphyrin in Urine: See under Urine

Pratt, A. G.: Psoriasis associated with cutaneous tuberculosis? 155
Susceptibility of allergic and nonallergic persons to rhus toxicodendron, *773

Pregnancy, erythema palmare as part of generalized telangiectasis during pregnancy, 836
urine in; gonadotropic substance in treatment of acne, 441

Pringle's Disease: See Sebaceous Glands

Pringle-Bourneville's Disease: See Sclerosis, tuberous

Prontosil, Therapy: See under Erysipelas

Prostate, enlarged; pruritus (generalized); urinary retention, 282

Prurigo nodularis, 451
nodularis, case for diagnosis, 127
or dermatitis factitia, 126
psychological factors in asthma-prurigo, 959

Pruritus ani, treatment by tattoo with mercuric sulfide, *337
generalized; enlarged prostate; urinary retention, 282
Hodgkin's disease with generalized pruritus, 832

Pseudopelade: See Alopecia, cicatrisata

Pseudoxanthoma elasticum, 150

Psoriasis associated with cutaneous tuberculosis? 155
atypical, case for diagnosis, 816
dermatitis exfoliativa in case of untreated psoriasis, 121
extensive, 485
guttata of skin and oral mucosa, 808
of hand or moniliasis, 892
of nails, *583
of oral mucosa; pigmented psoriasis, 808
or pityriasis rubra pilaris, 92
pustular, 664
relation between assimilation of water and dermatoses on basis of tests of water excretion in psoriasis, eczema and few other dermatoses (diuretic index), 258
"skin prints" (simple technic for following individual lesions in chronic skin diseases such as psoriasis), 787
squamous cell epithelioma in psoriatic patches, *241, 780

Puberty: See Adolescence

Pund, E. R.: Extragenital granuloma inguinale, *358

Purpura, pigmented purpuric lichenoid dermatitis (Gougerot), 506
purpuric and scarlatiniform eruption following sulfanilamide, 784
purpuric leukemid in case of chronic myelogenous leukemia, 463
relation between "systemic" lupus erythematosus and peculiar form of thrombocytopenic purpura, 82

Pusey, W. A.: Jubilee number of British Journal of Dermatology, 952

Pyoderma gangraenosum, report on case of, 980
gangrenous, accompanied with hemorrhagic colitis, 478
investigation of virus diseases of skin with report of case of Kaposi's varicelliform eruption, 789
or molluscum contagiosum, 965
pustulosis varioliformis seu vacciniformis acuta, 259
pyogenic lesions of skin associated with chronic ulcerative colitis, 829
varicelliform eruption of Kaposi (regressing), 792

Races, cancer and human races, 78
racial incidence of acrodynia, 253

Radiations: See Radium; Roentgen Rays; Ultraviolet Rays; etc.

Radiodermatitis: See Roentgen Rays

Radium, Bowen's disease in association with radium-induced atrophy of skin, 88
production of epithelial tumors by irradiation of precancerous skin lesion, 438
Therapy: See under names of various diseases

Rattner, H.: Bilateral herpes zoster, *436
Device for "continuous" patch tests, *619
Necrobiosis lipoidica diabeticorum, 268
Sarcoid, case for diagnosis, 284
Tertiary syphilis (extensive), 279

Raynaud's Disease, scleroderma or lupus erythematosus, 492

Recklinghausen's Disease: See Neurofibromatosis

Rectum, Paget-like disease of circumanal skin and carcinoma of rectum, 811
progressive scleroderma associated with structure of esophagus and rectum; improvement after cervical sympathectomy, 975

Reider, R. F.: Evaluation of Frei test with mouse brain antigen; comparison with human antigen, *930

Rein, C. R.: Lichen ruber moniliformis; report of observations at necropsy, *251

Rendu-Osler's Disease: See Telangiectasis

Reticuloendothelial System, influence of arsphenamine and syphilis on function of reticuloendothelial system and liver; influence of syphilis on function of reticuloendothelial system, 86

Retinitis, lupus erythematosus with exudative retinitis, 993

Reuter, M. J.: Mucous gland tumors of skin, *52

Rheumatic Fever, annular erythema and streptococcemia in course of Bouillaud's disease, 442
rheumatic erythema papulatum; cutaneous lesions of Aschoff-Klinge type, 790

Rhinoscleroma, 494

Rhus, susceptibility of allergic and nonallergic persons to rhus toxicodendron, *773

Ringworm: See also Mycosis, cutaneous; Tinea; Trichophytosis; etc.
erysipelas-like eruption complicating dermatophytosis, 80
of hand and scalp, 270
recurrent erysipelas-like manifestations of legs; their relationship to fungous infections of feet, 80
torch oil dermatitis; its relation to epidermomycosis ("ringworm"), 785
trichophytin test; its value as diagnostic aid, *713

Ritter's Disease: See Dermatitis exfoliativa

Roback, H. N.: Large epithelioma of cheek; report of case, *902

Robbins, J. B.: Hodgkin's disease with generalized pruritus, 832

Robinson, S. S.: Healed scleroderma, case for diagnosis, 482
Leukoderma acquisitum centrifugum in association with lichen planus, *200

Roentgen Rays, effects on fungi in vitro, *38
radiodermatitis following treatment for hypertrichosis, 991
radiodermatitis with ulcers, 798
scrofuloderma or secondary radiodermatitis, 452
Therapy: See under names of organs and regions, as Sarcoma; etc.

Rosen, I.: Prurigo nodularis, 451
Resistant secondary syphilis, 657

Rosenbach's Disease: See Erysipeloid

Rosenberg, M. N.: Lupus vulgaris (hypertrophic), 644

Rostenberg, A.: Chancroids cured with sulfanilamide, 509
Folliculitis decalvans et atrophicans (Little), or lichen planus acuminatus et atrophicans (Feldman), 668
Lupus erythematosus, 129
Lymphogranuloma venereum; chancroid; syphilis, 130
Pseudopelade of Brocq, case for diagnosis, 506

Rubber Plant: See under Plants

Rulison, R. H.: Multiple idiopathic hemorrhagic sarcoma (Kaposi), 102
Pigmented mole with white halo, case for diagnosis, 965
Tuberculosis of skin or atypical papulonecrotic tuberculid, 969

Sachs, W.: Multinucleated (giant) cell tumor of gum (epulis), *603
Steatocystoma multiplex congenitale; 10 cases in 3 generations, *877

Sacrum, blue nevus (face); "mongolian spots" (sacrum), 483

Salicyl Compounds, submucous hemorrhage of uvula with necrosis, following ingestion of acetylsalicylic acid, 288

Saliva, self cleansing of mouth, 260

Salt, acneform iododerma (iodized salt), 966

Sarcoid and lichen scrofulosorum, 91
case for diagnosis, 284, 1008
granuloma annulare or sarcoidosis, 128
ocular changes in Besnier-Boeck's disease, further contributions, 83
of Boeck, 142
of Boeck (generalized), 448
of Boeck, lichen scrofulosorum and papulonecrotic tuberculid, 447
or leprosy, 820
sarcoidosis (Besnier-Boeck-Schaumann syndrome) involving skin, lymph nodes, bones and tendon sheaths, 457
superficial circumscribed, 650
tuberculosis cutis (scrofuloderma, sarcoid and lichen scrofulosorum), 272
with lesions on arms resembling papulonecrotic tuberculid, 297

Sarcoma: See also Cancer; Tumors; and under names of tumors, as Angiosarcoma; Dermatofibrosarcoma; etc.
in dog treated with roentgen radiation, 160
Kaposi's, 315, 827
Kaposi's, case for diagnosis, 472
Kaposi's, in Negro, 985
melanotic, with extreme melanosis; report of case, *574
multiple idiopathic hemorrhagic, case for diagnosis, 1003
multiple idiopathic hemorrhagic (Kaposi), 102, 105, 277, 452
neurogenic, 263
syphilitic osteitis, 2 cases, 86

Saunders, H. C.: Lichenoid arsenical dermatitis, 472
Lymphogranuloma venereum, 477

Saunders, W. G.: Blue nevus or argyria, 302
Kaposi's sarcoma, 315
Scleroderma, 306

Sauter, S. H.: Cervical adenitis and erythema induratum, 296
Lichen scrofulosorum, 297
Rosacea-like tuberculid of Lewandowsky? 297

Sayer, A.: Dermatitis herpetiformis, 672
Dermatitis venenata or drug eruption, 118
Lupus erythematosus treated with bismuth preparation, 120

Scabies, albuminuria in association with scabies; review of literature and report of urinalyses in 216 cases, *19

Scalp, acquired progressive kinking of scalp hair with changes in its pigmentation, 648
argyria, lupus erythematosus of scalp and essential shriveling of conjunctiva (ocular pemphigus) with involvement of all mucous membranes, 151
Diseases: See under names of diseases, as Folliculitis; Ringworm; Seborrhea; Tinea; etc.
lupus erythematosus of scalp simulating burn with acid, 971
ringworm of hand and scalp, 270
superficial trichophytosis in adults, 84

Scarlet Fever; miliaria scarlatinosa suppurative, 961
therapeutic value of convalescent serum in, 635

Scars: See Cicatrix

Schildkraut, J. M.: Lupus erythematosus of lips, 265

Schiller, A. E.: Blue nevus or argyria, 302
Early Recklinghausen's disease, 318
Epidermolysis bullosa, 319
Kaposi's sarcoma, 315
Recklinghausen's disease, 319
Scleroderma, 306

Scholtz, J. R.: Clinical application of stain for spirochetes (Krajian), *217

Schüller-Christian Syndrome, 255

Schwartz, W. F.: Atopic eczema and asthma with bilateral cataract, 130
Erythema solare; 2 cases for diagnosis, 1010
Lymphogranuloma venereum with extension to hip, 133
Mouse brain lymphogranuloma venereum antigen; clinical experience at Cleveland City Hospital, *383
Pemphigus of conjunctivas and of mucous membranes of mouth and genitalia, 133
Squamous cell epithelioma developing on sebaceous cyst, 791
Ulcers of leg, associated with sickle cell anemia, in sisters, 1006
Varicelliform eruption of Kaposi (regressing), 792

Schwarzschild, L.: Leprosy, case for diagnosis, 461

Scleredema: See Scleroderma

Sclerodactylia: See Scleroderma

Scleroderma, 306
and hypertrichosis in child, 473
case clinically resembling morphea with tuberculous background and indeterminate history suggestive of necrobiosis lipoidica, 82
case for diagnosis, 492
healed, case for diagnosis, 482
lipophagic granuloma and sclerema neonatorum, 639
lupus erythematosus or Raynaud's disease, 492
macular atrophy with hyperpigmentation (superficial scleroderma?), 832

Scleroderma—Continued
morphea, 649, 982
morphea (unilateral distribution), 305
or poikiloderma, 140
progressive, associated with stricture of esophagus and rectum; improvement after cervical sympathectomy, 975
scleredema adultorum (Buschke), 159, *210, 305
scleredema adultorum (Buschke) with involvement of muscles in 11 year old boy, 634
sclerodactylia following injury, 976
scleroderma-like lesions on legs (poikiloderma?), 286
vegetative nervous system in, 256
with calcinosis (Thibierge-Weissenbach syndrome), 440

Scleroma: See Rhinoscleroma

Sclerosis, adenoma sebaceum and its role in neurocutaneous syndrome; tuberous sclerosis and its relationship to Recklinghausen's disease, 964
tuberous; Bourneville-Pringle's disease, 314
tuberous; Bourneville-Pringle's disease in patient whose right eye was enucleated because of intraocular tumor, 813

Scrofuloderma: See under Tuberculosis

Scrotum, lymphangiectasis associated with naevus flammeus and lymphangioma of scrotum and thigh, 982
study of fatal cases of cancer of scrotum from 1911 to 1935 in relation to occupation with reference to chimney sweeping and cotton mule spinning, 781

Sebaceous Glands, adenoma sebaceum, 100
adenoma sebaceum and its role in neurocutaneous syndrome; tuberous sclerosis and its relationship to Recklinghausen's disease, 964
adenoma sebaceum in epileptic moron, 147
adenoma sebaceum (Pringle type), associated with Recklinghausen's disease, 669
multiple benign cystic epithelioma or adenoma sebaceum in mother and daughter, 2 cases for diagnosis, 986
squamous cell epithelioma developing on sebaceous cyst, 791
steatocystoma multiplex congenitale; 10 cases in 3 generations, *877

Seborrhea, acne on seborrheic background (acnitis?), 987
seborrheic eczema, case for diagnosis, 508
seborrheic keratoses (carotenoid pigmentation?), 123

Senear, F. E.: Calcification in scar tissue, 267
Multiple idiopathic hemorrhagic sarcoma (Kaposi), 277
Mycosis fungoides, case for diagnosis, 285

Septum, Interventricular: See Heart

Sex, treatment of sexual undervelopment with synthetic male hormone substance, 638

Shaffer, B.: Epithelioma or tuberculosis cutis, case for diagnosis, 981
Liquefying nodular panniculitis; report of case, *535
Recurrent furunculoid lesions of adipose tissue, case for diagnosis, 153
Tinea capitis with trichophytid, 984

Shaffer, L. W.: Case for diagnosis, 316
Cervical adenitis and erythema induratum, 296
Lichen scrofulosorum, 297
Lymphogranuloma venereum especially its treatment with sulfanilamide, *705
Parapsoriasis lichenoides et varioliformis, case for diagnosis, 815
Rosacea-like tuberculid of Lewandowsky, 297

Sharlit, H.: Routine patch tests, *951

Shaving; factors involved in satisfactory shaving, 80

Shellow, H.: Mycosis fungoides, case for diagnosis, 285
Shoes, Dye: See Dyes
Short Waves: See under names of organs and regions
Silver, H.: Unusual cutaneous manifestations in psychopathic patient (malingering?), 505
Silver: See also Stains and Staining
argyria, 302
argyria confined to bulbar conjunctivas, 654
argyria, lupus erythematosus of scalp and essential shriveling of conjunctiva (ocular pemphigus) with involvement of all mucous membranes, 151
argyria under treatment, 276
blue nevus or argyria, 302
localized argyria following treatment of burn with tannic acid and silver nitrate, 645
Skeer, J.: Xanthomatosis (generalized); hepatomegaly associated with jaundice; tertiary syphilis, 468
Skin, Abnormalities: See also Atrophy; Ectodermal defect; Pigmentation; etc.
abnormalities; case of "cutis laxa ipo-elastica," 257
Atrophy: See Atrophy
Blood Supply: See also Capillaries
blood supply; progressive cutaneous vascular disease with hemorrhage by diapedesis, 460
Cancer: See Cancer; Epithelioma; Sarcoma; etc.
cutaneous horn in Negro, 1007
cutaneous manifestations of tularemia, *859
cutis elastica abnormally sensitive to trauma, 498
cutis hyperelastica, 828
Diseases: See also Dermatitis; and under names of diseases, as Eczema; Herpes; Mycosis, cutaneous; etc.; and under names of plants and drugs, as Arsphenamines; Rhus; etc.
diseases; cutaneous manifestations of myelogenous leukemia, 641
diseases; dermatologic manifestations of lymphoblastoma-leukemia group, 783
diseases; dermatologic symptoms of vitamin deficiencies, *389
diseases; exudative discoid and lichenoid dermatosis, 154
diseases, incidence in feebleminded persons, *203
diseases; infiltrated scaling plaques of legs, thighs, elbows and knees, followed by atrophy, case for diagnosis, 1002
diseases; monocytic leukemia; cutaneous manifestations of Naegeli and Schilling types; hemocytologic differentiation, 80
diseases; neurocutaneous syndrome, 152
diseases; Paget-like disease of circumanal skin and carcinoma of rectum, 811
diseases; psychological aspects of, 959
diseases; relation between assimilation of water and dermatoses on basis of tests of water excretion in psoriasis, eczema and few other dermatoses (diuretic index), 258
diseases; report on helminthiasis and dermatoses, 642
diseases; significance of porphyrin content of urine in dermatoses associated with sensitivity to light, *727
diseases; "skin prints" (simple technic for following individual lesions in chronic skin diseases such as psoriasis), 787
gangrene; dermatitis gangraenosa infantum, *407
Hemorrhage: See Purpura
Inflammation: See Dermatitis
influence of glycerol on skin necrosis produced by staphylococcus toxin, 959
investigation on resorption of substances by skin and mucous membranes, 962
mucous gland tumors of, *52
Pigmentation: See under Pigmentation
Skin—Continued
prognostic significance of cutaneous lesions in coccidioidal granuloma, *752
results of experimental investigation on cutaneous storage of dyes, 445
sarcoidosis (Besnier-Boeck-Schaumann syndrome) involving skin, lymph nodes, bones and tendon sheaths, 457
Syphilis: See Syphilids
Tuberculosis: See Tuberculids; Tuberculosis
Tumors: See under Tumors
Ulcers: See Ulcers
unusual cutaneous manifestations in psychopathic patient (malingering?), 505
Slepyan, A.: Lupus erythematosus disseminatus subacutus with phlyctenular keratoconjunctivitis, 831
Pemphigus, 273
Smallpox, pustulosis varioliformis seu vaccini-formis acuta, 259
vaccination; lymph nodes as source of neutralizing principle for vaccinia, 81
vaccination; parallergic vaccinal exanthem, 258
Smith, D. C.: Cutaneous manifestations of tularemia, *859
Smith, H. J.: Scleredema adultorum (Buschke), 159
Smith, L. M.: Dermatitis caused by Mexican rubber plant, *780
Snake Venom: See Venom
Sobel, N.: Fox-Fordyce disease, 469
Pityriasis rosea with vesicles, including face, 466
Sobisminol: See under Syphilis
Societies, American Academy of Dermatology and Syphilology, annual meeting, 624, 954
American Board of Dermatology and Syphilology, certification by, 77, 624
dermatologic, directory of, 325, 675, 1017
foreign, directory of, 325, 675, 1017
international, directory of, 325, 675, 1017
local, directory of, 327, 677, 1019
national, directory of, 325, 675, 1017
sectional, directory of, 326, 676, 1018
state, directory of, 326, 676, 1018

Society Transactions:

Atlantic Dermatologic Conference, 142
Bronx Dermatological Society, 115, 504, 664
Central States Dermatological Association in connection with organization of American Academy of Dermatology and Syphilology, 292
Chicago Dermatological Society, 266, 827
Cleveland Dermatological Society, 130, 791, 1006
Detroit Dermatological Society, 317, 804
Los Angeles Dermatological Society, 482, 644
Manhattan Dermatologic Society, 106, 652
Minnesota Dermatological Society, 478, 648
New York Academy of Medicine, Section of Dermatology and Syphilis, 447, 816
New York Dermatological Society, 87, 797, 965
Philadelphia Dermatological Society, 155, 261, 981
San Francisco and Los Angeles Dermatological Societies, 486
San Francisco Dermatological Society, 136, 996

Sodium Bismuth Iodide: See Bismuth and Bismuth Compounds
Spectacles: See Glasses
Spiegel, L.: Discoloration of cheeks and neck, case for diagnosis, 115
Lichen planus; secondary syphilis, 470, 509
Seborrheic keratoses (carotenoid pigmentation?), 123
Spinal Fluid: See Cerebrospinal Fluid

Spiradenoma, 90
Spirochaeta, clinical application of stain for spirochetes (Krajian), *217
pallida, reliable method of staining in smears, *427
Splenomegaly, hypercholesteremic, with xanthomatosis and dermatitis herpetiformis, 145
Sporotrichosis, 313
disseminated subcutaneous type, 131
Stains and Staining, clinical application of stain for spirochetes (Krajian), *217
new method of staining skin and hairs for detection of fungi, 788
reliable method of staining Spirochaeta pallida in smears, *427
subsurface mycelium and dyes; their significance in mycologic studies, *235
Staphylococci, influence of glycerol on skin necrosis produced by staphylococcus toxin, 959
staphylococcic endocarditis superimposed on syphilitic aortic endocarditis, 785
toxoid as mode of treatment, 260
Steatocystoma multiplex congenitale; 10 cases in 3 generations, *877
Stiles, F.: Argyria, 302
Stillians, A. W.: Argyria under treatment, 276
Parapsoriasis guttata with leukoderma, 270
Stokes, J. H.: Tabes dorsalis; cooperative clinical studies in treatment of syphilis, *692
Stomatitis and dermatitis from mercury of amalgam fillings, *349
Strain, W. H.: Significance of porphyrin content of urine in dermatoses associated with sensitivity to light, *727
Strauss, A.: Keratosis pilaris, possible prelude to pityriasis rubra pilaris, 154
Streptococci: See also Erysipelas; Scarlet Fever
annular erythema and streptococcemia in course of Bouillaud's disease, 442
mixed infection, treated with zinc peroxide, 94
pyogenes, varicella gangrenosa due to, 442
streptococcic dermatoses, 443
Striae hypertrophicae symmetricae juvenilis, 261
Stulik, C. K.: Dermatitis gangraenosa infantum, *407
Sudoriparous Glands: See under Sweat Glands
Sulfanilamide and Sulfanilamide Derivatives; dermatitis from sulfanilamide, 639
development of cutaneous eruption (toxicodermatosis) during administration of sulfanilamide; report of 2 cases, 639
hypersensitivity to sulfanilamide, 784
photosensitizing agent of skin, 784
purpuric and scarlatiniform eruption following sulfanilamide, 784
rash, 638
skin eruptions in patients receiving sulfanilamide, 638
Therapy: See under Chancroid; Lupus erythematosus; Lymphogranuloma Venereum; etc.
Sulzberger, M. B.: Acanthosis nigricans or papillomatose réticulée (Gougerot), 666
Acne varioliformis, successfully treated with staphylococcus toxoid, 122
Cheilitis (lipstick?), 118
Generalized moniliasis and moniliids, 124
Incontinentia pigmenti (Bloch-Sulzberger); report of additional case with comment on possible relation to new syndrome of familial and congenital anomalies, *57
Sunburn: See Light, toxicity
Sunlight: See under Light
Suprarenals: See Adrenals
Sutton, R. L., Jr.: Case of inherited ainhum-like hyperkeratosis, *26
Sutton's Disease: See Vitiligo
Sweat Glands, active; method for their study, *340
hereditary ectodermal dysplasia of anhidrotic type (congenital ectodermal defect), *893
human autonomic pharmacology; general and local sweating produced by acetyl-beta-methylcholine chloride (mecholyl), 438
spiradenoma, 90
sudoriparous glands; apocrine glands, *373
syringocystadenoma multiplex, 809
syringocystoma, 455
syringofibroangioma originally presented as traumatic fibroangioma with localized hyperhidrosis, 833
Sweitzer, S. E.: Morphea, 649
Multiple draining periurethral sinuses, case for diagnosis, 648
Superficial circumscribed sarcoid, 650
Sycosis parasitica due to Favotrichophyton album var. singulare, *756
Sympathectomy, progressive scleroderma associated with stricture of esophagus and rectum; improvement after cervical sympathectomy, 975
Syphilids, arsenoresistant psoriasiform syphilid, 653
Syphilis: See also Chancre; Spirochaeta pallida; Syphilids; Venereal Diseases; and under names of organs and regions, as Bones; etc.; and under names of diseases, as Aortitis: Conjunctivitis; etc.
among Arabs in near East; bejel and loath in Iraq and Syria; firjal and latta in Palestine; lagout in Lebanon; abou-laghif and jifar in Trans-Jordan, *837
amyotrophia syphilitica with subcutaneous fibroid nodules, 133
and mycosis fungoides, 995
and unemployment, 82
assembly of laboratory directors and serologists, 77
causative factors in production of Laënnec's cirrhosis with reference to syphilis, 782
chancroid cured with sulfanilamide and lymphogranuloma venereum, 476
clinical application of stain for spirochetes (Krajian), *217
comparison of series of Wassermann and Kline tests with respect to specificity and sensitivity, 787
congenital, in "second" generation, 259
congenital, lymphedema of eyelids and recurrent erysipelas, 814
congenital, mapharsen in treatment of, *943
congenital, value of mapharsen in treatment of, 440
dermatitis medicamentosa (arsphenamine) in patient under treatment for syphilis, 104
divided doses of typhoid H antigen vaccine in treatment of neurosyphilis, 782
epithelioma of lip or ulcerative tertiary syphilis on right buccal mucosa with lingual and buccal leukoplakia, 670
experimental treatment of early syphilis with artificial fever combined with chemotherapy, 783
in relation to prevention of blindness; study of 100,000 case records, 638
inadequate treatment of early syphilis (clinical results in 409 patients), 78
influence of arsphenamine and syphilis on function of reticuloendothelial system and liver; influence of syphilis on function of reticuloendothelial system, 86
iodobismitol in treatment of, 786
Kline flocculation test; its significance and application in obstetric service of Queens General Hospital, *918
latent; case for diagnosis (poikiloderma?), 978
lichen planus accentuated by neoarsphenamine therapy, 153

Syphilis—Continued
linear eruption resembling lichen planus in syphilitic patient with arsenical dermatitis, 659
luetic pseudo-cysticercosis, 641
lymphogranuloma venereum and chancroid, 130
macular atrophy secondary to, 467, 504
New York City plan for combating syphilis, 639
nonspecific therapy in, 443
or mycosis fungoides, 647
postarsphenamine jaundice, 636
present-day status of treatment of neurosyphilis, 785
question of positive fluid in first year of syphilitic infection; incidence, prognosis and therapy, 257
resistant secondary syphilis, 657
secondary, and lichen planus, 470, 509
serodiagnostic tests as performed by 39 state laboratories, 81
seronegative tertiary syphilis or lupus vulgaris, 806
serum cholesterol in, 635
studies in cardiovascular syphilis; influence of treatment of early syphilis on incidence of cardiovascular syphilis, 956
superinfection in man, 643
survey among students at University of Wisconsin, *70
syphilitic epilepsy, 635
syphilitic onychia; report of case in which ungual changes helped to establish diagnosis and time of syphilitic infection, *432
tabes dorsalis; cooperative clinical studies in treatment of syphilis, *692
tertiary, 157
tertiary, extensive, 279
tertiary, with unusually extensive involvement, 1011
tertiary; xanthomatosis (generalized); hepatomegaly associated with jaundice, 468
third generation syphilis, 785
Treatment: See also Arsphenamines; Bismuth and Bismuth Compounds; etc.
treatment-resistant primary syphilis, 1000
treatment with hyperpyrexia with observations on prognosis of optic atrophy, 956
tryparsamide therapy of neurosyphilis and atrophy of optic nerve, 786
visceral pathology in Haitian treponematosis, 637

Syphiloderm, late, resembling erythema annulare centrifugum, 279

Syringocystadenoma multiplex, 809

Syringocystoma, 455

Syringofibroangioma originally presented as traumatic fibroangioma with localized hyperhidrosis, 833

Syringoma, calcified, 259

Syringomyelia with malum perforans in brothers, 142

Tabes Dorsalis, cooperative clinical studies in treatment of syphilis, *692

Tachycardia: See under Heart

Tannin, compound solution of tannic acid, 81

Tattoo, chronic inflammation in tattoo mark, 481

Taussig, L. R.: Pemphigus or erythema multiforme, 1005
Scleroderma, lupus erythematosus or Raynaud's disease, 492

Teeth, dermatitis and stomatitis from mercury of amalgam fillings, *349
self cleansing of mouth, 260

Telangiectasis: See also Angioma
erythema palmare as part of generalized telangiectasis during pregnancy, 836
hereditary hemorrhagic, 997

Telangiectasis—Continued
hereditary hemorrhagic telangiectasia (Osler), 498
telangiectatic lupus erythematosus, 265

Templeton, H. J.: Erythroderma with stiffness and induration of deeper tissues, case for diagnosis, 1001
Hereditary hemorrhagic telangiectasia (Osler), 498
Lupus erythematosus, 503
Pemphigus vulgaris, 486
Scleroderma, case for diagnosis, 492

Tendons, sarcoidosis (Besnier-Boeck-Schaumann syndrome) involving skin, lymph nodes, bones and tendon sheaths, 457

Testicles, experimental investigation of toxic substances in skin affected with dermatitis; influence of extract of skin affected with dermatitis on histologic picture of liver, kidney and testis, 790

Thibierge-Weissenbach Syndrome: See Calcification

Thigh, lymphangiectasis associated with naevus flammeus and lymphangioma of scrotum and thigh, 982

Thiobismol: See Bismuth and Bismuth Compounds

Thomas, C. C.: Acne on seborrheic background (acnitis?), 987
Radiodermatitis following treatment for hypertrichosis, 991

Thrombocytopenia: See Purpura

Thymol: See under Actinomycosis

Tinea: See also Ringworm; Trichophytosis
amiantacea, 807
barbae, case for diagnosis, 661
capitis with trichophytid, 984
Decalvans: See Alopecia areata
favosa; favus (familial infection), 144
favosa; favus involving toe nail; report of case, *856
glabrosa; dermatophytosis, 109
versicolor; pityriasis versicolor involving inguinal region and genitocrural folds, *249
versicolor; treatment of epidermomycoses (trichophytosis, pityriasis versicolor) with eosin, 790

Tissue: See Cells

Tobin, W. W.: Cutis hyperelastica, 828
Lichen nitidus, case for diagnosis, 834
Melanoma, 288
Xanthoma multiplex, 267

Toe Nails: See Nails

Toes: See Fingers and Toes

Tolmach, J. A.: Treatment of dermatophytosis with vaccines, *925

Tomlinson, C. C.: Juvenile pemphigus; effects of germanin in 3 cases, *555

Tongue, epithelioma of, case for diagnosis, 290
epithelioma of lip or ulcerative tertiary syphilis on right buccal mucosa with lingual and buccal leukoplakia, 670
inflammation; glossitis rhombica mediana or lingual fibroma, 161

Torch Oil: See Petroleum Products

Torpin, R.: Extragenital granuloma inguinale, *358

Torrey, F.: Cushing's syndrome (basophilic adenoma of pituitary gland), 490
Cushing's syndrome (early), 491
Fixed eruption (phenolphthalein), 999
Infiltrated scaling plaques of legs, thighs, elbows and knees, followed by atrophy, case for diagnosis, 1002
Tuberculid, 1004
Tuberculosis verrucosa cutis, case for diagnosis, 501

Torula infection of central nervous system, 79

Toxicodermas: See Dermatitis, venenata; Drugs, eruptions

Traub, E. F.: Dermatitis and stomatitis from mercury of amalgam fillings, *349
Dermatitis herpetiformis; cancer of pancreas, 974
Dermatitis medicamentosa (arsphenamine) in patient under treatment for syphilis, 104
Livedo reticularis in 2 sisters, 801
Lupus erythematosus, case for diagnosis, 967
Lupus miliaris disseminatus faciei, 979
Mixed infection, treated with zinc peroxide, 94
Multiple epitheliomas, 977
Mycosis fungoides, 465
Pemphigus, 976
Pityriasis lichenoides et varioliformis acuta, 979
Poikiloderma; case for diagnosis; latent syphilis, 978
Report on case of dermatitis herpetiformis, 803
Report on case of possible lupus erythematosus, 803
Treatment of dermatophytosis with vaccines, *925

Trauma, sclerodactylia following injury, 976

Treponema: See Spirochaeta pallida

Treponematosis: See Frambesia; Syphilis

Trichomoniasis, arsenical dermatitis produced in treatment of trichomonas vaginitis; report of 5 cases, *198

Trichophytid: See Trichophytosis

Trichophytin test; its value as diagnostic aid, *713

Trichophyton purpureum, dermatophytosis (hands, feet and toe nails) due to, 646
sycosis parasitica due to Favotrichophyton album var. singulare, *756

Trichophytosis: See also Mycosis
superficial, of scalp in adults, 84
tinea capitis with trichophytid, 984
treatment of epidermomycoses (trichophytosis, pityriasis versicolor) with eosin, 790

Trichostasis: See under Hair

Tryparsamide, nitritoid reaction following injection of, *949
therapy of neurosyphilis and atrophy of optic nerve, 786

Tuberculids, 1004. See also under Tuberculosis
case for diagnosis, 658
grouped nodular tuberculids (Jadassohn), 293
papulonecrotic, 986
papulonecrotic, sarcoid of Boeck and lichen scrofulosorum, 447
rosacea-like, of Lewandowsky? 264, 272, 297
rosacea-like, of Lewandowsky (following sunburn); xanthelasma, 455
sarcoid with lesions on arms resembling papulonecrotic tuberculid, 297
tuberculosis of skin or atypical papulonecrotic tuberculid, 969

Tuberculin: See under Tuberculosis

Tuberculosis: See also under Face; etc.
case clinically resembling morphea with tuberculous background and indeterminate histology suggestive of necrobiosis lipoidica, 82
case for diagnosis, 293
cutis, 138, 296
cutis or epithelioma, 981
cutis (scrofuloderma, sarcoid and lichen scrofulosorum), 272
diagnostic and therapeutic use of tuberculin in certain acneform eruptions, *737
disseminate, of face (mixed type), 810
disseminated hematogenous, of lupus tumidus type, 292
distinctive type, in Negress, 148

Tuberculosis—Continued
erythema nodosum as evidence of increased allergy to tuberculin; its appearance following tuberculin reactions, 442
experimental study of protective inoculation with heat killed tubercle bacilli, 786
of nodes, bones and epididymis, and periarteritis (tuberculous?), 651
of skin or atypical papulonecrotic tuberculid, 969
of skin or capillaritis, 1009
psoriasis associated with cutaneous tuberculosis? 155
results of treatment of eczema in infants with BCG, 442
scrofuloderma or secondary radiodermatitis, 452
serologic diagnosis of tuberculosis, particularly of lupus, 257
tuberculin skin sensitivity in chronic tuberculosis in course of hospital treatment; measurement by standard tuberculin (purified protein derivative), 439
tuberculous abscesses, 799
tuberculous chancre, 646
verrucosa cutis, case for diagnosis, 501

Tularemia, cause of death in, 79
cutaneous manifestations of, *859

Tulipan, L.: Cosmetic irritants, *906

Tumors: See also Adenoma; Angioma; Cancer; Endothelioma; Epithelioma; Fibroma; Leiomyoma; Lymphangioma; Lymphoblastoma; Lymphoma; Melanoma; Papilloma; Sarcoma; etc.; and under names of organs and regions, as Lips; Penis; Scrotum; etc.
action of short radio waves on tissues; treatment of animal tissues in vivo, 78
cutaneous metastases of malignant disease, 438
giant cell tumor of epulis type, 794
glomal, 957
glomus tumor, case for diagnosis, 108
multinucleated (giant) cell tumor of gum (epulis), *603
time factor in irradiation of malignant tumors, 957

Turnacliff, D. D.: Tuberculosis (nodes, bones and epididymis); periarteritis (tuberculous?), 651

Twining, H. E.: Acrodermatitis chronica atrophicans, 991
Case for diagnosis, 994

Typhoid, experiments in immunization by application of typhoid vaccine to scarified cutaneous surfaces (Jennerization), 962

Ulcers, chancroidal, of long duration cured with sulfanilamide, 660
of leg, associated with sickle cell anemia, in sisters, 1006
radiodermatitis with ulcers, 798
trophic; peripheral neuritis; calcification of ears, 987

Ulerythema acneiforme, 292

Ultrashort Waves: See under names of organs, regions and diseases, as Tumors; etc.

Ultraviolet Rays: See also Light
lupus erythematosus discoides with spread of lesions after ultraviolet irradiation, 114

Umansky, M.: Disseminated superficial lupus erythematosus, case for diagnosis, 127
Granuloma annulare or sarcoidosis, 128

Unemployment and syphilis, 82

Urination; pruritus (generalized); enlarged prostate; urinary retention, 282

Urine: See also Urination
Androgens: See Androgens
clinical excretion of bismuth; late excretion of bismuth after cessation of treatment, 440

Urine—Continued
clinical excretion of bismuth; urinary excretion of bismuth after clinical intramuscular injections of sodium iodobismuthite (sodium bismuth iodide, iodobismitol) and sodium bismuth thioglycollate (thiobismol), 439
determination of ascorbic acid in urine of patients with lupus vulgaris by methylene blue method, 258
electrolytes of blood and urine of dogs with acute hepatic injury produced by arsphenamine, 635
Estrogens: See Estrogens
significance of porphyrin content of urine in dermatoses associated with sensitivity to light, *727
suppression; toxic effects of bismuth with reference to renal damage and report of case of anuria, 957
Urticaria, new immunologic wheal produced experimentally by reverse technic, *1
papulosa; lichen urticatus (papular urticaria); treatment with parathyroid extract; theoretical consideration of etiology, 253
pigmentosa beginning at age of 7 years, 797
provoked by heat or by psychic stimuli, *679
Usilton, L. J.: Tabes dorsalis; cooperative clinical studies in treatment of syphilis, *692
Uvula, submucous hemorrhage of uvula with necrosis, following ingestion of acetylsalicylic acid, 288

Vaccines: See Mycosis, cutaneous
Vaccinia: See Smallpox, vaccination
Van Rhee, G.: Calcinosis circumscripta, 307
Case for diagnosis, 294, 295, 309
Neurodermatitis disseminata with cataract, 323
Tuberculosis, case for diagnosis, 293
Van Studdiford, M. T.: Diagnostic and therapeutic use of tuberculin in certain acneform eruptions, *737
Varicella: See Chickenpox
Variola: See Smallpox
Venereal Diseases: See also Chancre; Chancroid; Syphilis
syphilis looks at doctor, 958
Venom, treatment of herpes simplex with moccasin venom, *599
Vero, F.: Scrofuloderma or secondary radiodermatitis, 452
Verruca plana juvenilis or naevus unilateralis, 996
Vesication, pityriasis rosea with vesicles, including face, 466
Viecelli, J. D.: Cutis elastica abnormally sensitive to trauma, 498
Virilism, loss of hair as symptom of masculinization in woman, 444
Viruses, contribution to virus origin of pemphigus vulgaris, 960
investigation of virus diseases of skin with report of case of Kaposi's varicelliform eruption, 789
Viscera; visceral pathology in Haitian treponematosis, 637
visceral pathology in measles; clinico-pathologic study of 100 fatal cases, 79
Vitamins: See also Deficiency Diseases; etc.
B; unusual eruption suggestive of vitamin B_2 deficiency, cured by injections of liver extract, 450
C; determination of ascorbic acid in urine of patients with lupus vulgaris by methylene blue method, 258
Vitamins—Continued
C; experimental arsphenamine dermatitis; influence of vitamin C in production of arsphenamine sensitiveness, 254
dermatologic symptoms of vitamin deficiencies, *389
Vitiligo: See also Albinism
alopecia universalis and leukoderma acquisitum centrifugum, 263
and exfoliative dermatitis (gold?), 264
leukoderma acquisitum centrifugum in association with lichen planus, *200
leukoderma centrifugum acquisitum of Sutton, 455
parapsoriasis guttata with leukoderma, 270
Vonderlehr, R. A.: Tabes dorsalis; cooperative clinical studies in treatment of syphilis, *692
Vulva, granuloma inguinale; report of case of involvement of upper lip and depigmentation and edema of vulva, *245
primary focus of tuberculosis in, 964
ulcus vulvae acutum with ulcers in mouth, 643

Walker, H. L.: Contact and environmental allergens as cause of eczema in infants and in children, *511
Walzer, A.: Urticaria; new immunologic wheal produced experimentally by reverse technic, *1
Wander, W. G.: Case for diagnosis, 309
Warren, L. H.: Lymphogranuloma venereum, 158, 262
Warts: See Verruca
Washburn, J. C.: "Acne mixed" undenatured bacterial antigen in treatment of acne vulgaris, *405
Wassermann Reaction: See under Syphilis
Water, relation between assimilation of water and dermatoses on basis of tests of water excretion in psoriasis, eczema and few other dermatoses (diuretic index), 258
Way, S. C.: Actinomycosis, 139
Fox-Fordyce disease, 140
Sarcoid of Boeck, 142
Sudoriparous glands; apocrine glands, *373
Weber-Christian's Disease: See Panniculitis
Weber-Rendu-Osler's Disease: See Telangiectasis
Webster, J. R.: Bromoderma, 278
Weidman, F. D.: Sarcoma in dog treated with roentgen radiation, 160
Weil's Disease: See Jaundice, spirochetal
Weissenbach-Thibierge Syndrome: See Calcification
White, C. J.: Addison's disease or chloasma, 289
Whitehouse, Henry Howard, 631
Wile, U. J.: Mycosis fungoides in mother and in daughter; further report, *939
Necrobiosis without diabetes, 311
Scleredema adultorum (Buschke), 305
Tabes dorsalis; cooperative clinical studies in treatment of syphilis, *692
Williams, J. W.: Production of surface growth of pathogenic fungi on culture mediums; some factors of importance, *32
Subsurface mycelium and dyes; their significance in mycologic studies, *235
Wilson, M., Jr.: Incidence of diseases of skin in feebleminded persons, *203
Wise, F.: Angiosarcoma of hand and arm, 659
Buccal and labial lupus erythematosus or pemphigus, 663
Discoid lupus erythematosus undergoing dissemination, 661

Wise, F.—Continued
Disseminated lupus erythematosus treated with sodium gold thiosulfate, 973
Eczema diffusum resembling mycosis fungoides, 652
Lichen nitidus, 979
Lichen ruber moniliformis; report of observations at necropsy, *251
Tuberculid, case for diagnosis, 658
Wolf, C.: Lupus erythematosus, 510
Mucous cysts of mucous membrane of hard palate, 466
Wolfe, W. D.: Dermatitis due to shoe leather and to shoe polish, *434
Hereditary ectodermal dysplasia of anhidrotic type (congenital ectodermal defect), *893
Wolff, M. J.: Tuberculous chancre, 646
Wollenberg, R. A. C.: Lupus erythematosus disseminatus, 295
Work, J. L.: Sycosis parasitica due to Favotrichophyton album var. singulare, *756
Workmen's Compensation Act and dermatitis, 640
Wright, C. S.: Exudative discoid and lichenoid dermatosis, 154
Neurogenic sarcoma, 263
Vitiligo; exfoliative dermatitis (gold?), 264
Xanthelasmatosis, associated with hepatic enlargement of undetermined nature, 261

Xanthelasma: See Xanthoma
Xanthoma diabeticorum, 267
diabeticorum, case associated with diabetes mellitus and acromegaly, 782
Xanthoma—Continued
generalized xanthomatosis; hepatomegaly associated with jaundice; tertiary syphilis, 468
hypercholesteremic splenomegaly with xanthomatosis and dermatitis herpetiformis, 145
juvenile, 267
multiplex, 267
rosacea-like tuberculid of Lewandowsky (following sunburn); xanthelasma, 455
tuberosum associated with trauma and mild diabetes mellitus, 81
tuberosum, extensive, in childhood due to infectious cirrhosis of liver, 253
xanthelasma, 495
xanthelasmatosis associated with hepatic enlargement of undetermined nature, 261
Xanthomatosis: See Xanthoma
Xeroderma pigmentosum with carcinoma of lower lip in 2 brothers, aged 16 and 13 years, 78

Yaws: See Frambesia
Yeast: See under Fungi

Zeisler, E. P.: Melanosis (postinflammatory), 274
Pyogenic lesions of skin associated with chronic ulcerative colitis, 829
Rosacea-like tuberculid of Lewandowsky, case for diagnosis, 272
Zoster: See Herpes zoster
Zwick, K. G.: Jean Darier, 625

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Clinical Notes:

Nitritoid Reactions Following an Injection of Mapharsen. Gerson David Ascher, M.D., and Andrew G. Rudolph, M.D., New York 949

Minor Notes:

Routine Pelvic Treatment. Norman Stanley, M.D., New York 951

Editorials:

Jubilee Number of the British Journal of Dermatology 952

News and Comment:

American Academy of Dermatology and Syphilology 954

Abstracts from Current Literature 956

Society Transactions:

New York Dermatological Society 965

Philadelphia Dermatological Society 981

San Francisco Dermatological Society 996

Cleveland Dermatological Society 1006

Book Reviews 1014

Directory of Dermatologists 1017

General Index 1021